JOURNAL OF THE HISTORY OF MEDICINE
AND ALLIED SCIENCES

Volume XI *October 1956* *Number 4*

AN UNNOTICED CONTEMPORARY ENGLISH POEM IN PRAISE OF HARVEY AND ITS AUTHOR, JOHN COLLOP, M.D., *F. N. L. Poynter* 374

MEDICAL POEMS FROM JOHN COLLOP'S *POESIS REDIVIVA* (1656), *Conrad Hilberry* 384

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND SOME CITY LIVERY COMPANIES, *O. M. Lloyd* 412

WHAT BECAME OF THE DEGENERATE? A Brief History of a Concept, *Richard D. Walter* 422

THOMAS BEDDOES AND THE TREATMENT OF SPINAL CURVATURES AT BRISTOL ABOUT 1800, *A. C. Todd* . . 430

A SALUTE TO ABRAHAM FLEXNER, *John F. Fulton* 439

NOTES AND QUERIES 440

Vincenzo Gabelli: The Restoration of the Anatomical Theater at Bologna; Fracastoro on the Lagoons of Venice; The William Harvey Tercentenary Celebrations—June, 1957; The Sarton Medal 1956; The Schuman Medical Historical Essay Prize; National Library of Medicine; American Association of the History of Medicine, 6-8 May 1957; Symposia at the State University of New York; The Library of Lavoisier; Professor René Leriche; Sir Thomas Browne; Deutsche Vereinigung für Geschichte der Medizin; Dr. John Smith (1825-1910); Gift to California Institute of Technology; Philadelphia, 1793; Greek and Roman Medicine; Proposed Museum of History and Technology; *Medical History*

BOOK REVIEWS 451

Galen. *Galen on Anatomical Procedures.* Translation of the surviving books with introduction and notes by Charles Singer. Reviewed by Thomas R. Forbes 451

Paul Diepgen. *Geschichte der Medizin: Die Historische Entwicklung der Heilkunde und des Ärztlichen Lebens.* Reviewed by Ilza Veith 452

Karl Abraham. *Clinical Papers and Essays on Psycho-analysis.* Reviewed by Eugene L. Bliss 453

Agatha Young. *Scalpel—Men Who Made Surgery.* Reviewed by Gustaf E. Lindskog 454

Winfred Overholser, Ed. *Centennial Papers Saint Elizabeths Hospital* (1855-1925). Reviewed by the Editor 455

Doo Jong Kim. *History of Medicine of Korea.* Reviewed by Ilza Veith 457

NOTES ON CONTRIBUTORS 458

INDEX TO VOLUME XI 459

Printed in the United States of America
by the Van Dyck Printing Company
New Haven, Connecticut

Editorial Dilemma

There are a number of subjects in the history of medicine and a far longer list of those who have made history which engage the interest of writers again and again, but lesser figures are not likely to receive attention from more than one champion. It therefore seems a rare coincidence that an English professor in Greencastle, Indiana, U.S.A., and a Librarian in London, England, should happen on the same obscure seventeenth century poet—a man so obscure that the dates of his birth and death are not recorded. In ordinary circumstances the editor of a journal would not accept two papers on the same subject, but since these two complement each other, it seemed a clear duty to our readers to present them together even though there be a little overlapping. Perhaps John Collop, poet and physician, who was only about thirty-one years old when his book was published, will thus, with light being shed on him from two directions, receive the attention he so obviously deserves.

To discover a new poet is a matter for just fervor. If he be a young and living poet, the sponsor should not take too much to himself, since his man is likely enough to discover himself in time with no one's assistance. But, when he is a poet buried in the oblivion of centuries, the lucky finder may say with pride, I did it. To bring a poet back to life is an act having in it the nicest salt of piety. But for this chance, it may be ventured, the loss of so many years might have been a loss forever.*

JOHN F. FULTON, *Editor*

* Drinkwater, J. An unknown poet. *Yale Review*, 1921, *10*, 323-337.

Copyright 1956 by JOURNAL OF THE HISTORY OF MEDICINE AND ALLIED SCIENCES, INC.

An Unnoticed Contemporary English Poem in Praise of Harvey and its Author, John Collop, M.D.

F. N. L. POYNTER*

WHILE working in the Bodleian Library in the summer of 1953 I came across a volume of poems published in London in 1656 which was quite new to me. The author, a certain John Collop, signed himself M.D. and I perused the work in the hope of finding verses which dealt with contemporary medical topics. My search was richly rewarded, for among a group of poems of medical interest I found one "On Doctor Harvey" and another "On Dr. George Ent," as well as several others, notably one "Of the Blood," which clearly reflect Harvey's teaching.

It seemed at first unlikely, after three hundred years of perennial interest in Harvey and all that touched upon the man or his work, that these verses should have remained unknown. As medical poets of Collop's obvious ability are by no means common I was also prepared to find that my own ignorance of his name and writings was not universally shared. It was somewhat reassuring therefore to find that although his name appears in *The Dictionary of National Biography*, nothing was known to the writer of the brief article on him beyond his authorship of the book which I had seen, together with two or three short tracts, and that he flourished about 1660. The place and date of his birth, the school and university where he received his education, as well as the source of his M.D., all seemed to be quite unknown.

A search of numerous biographical records yielded more positive results. Venn,[1] citing the registers of Charterhouse, London, and Pembroke College, Cambridge, gives the information that he was the son of John Collop, a mercer, that he was born at Flitwick in Bedfordshire, went to school at Charterhouse, and from there went as an exhibitioner to Pembroke College in October 1641 at the age of sixteen. Details of his subsequent career at Cambridge are not recorded, a fact which is not surprising when we remember what was happening in England in that decade. Collop was un-

* Wellcome Historical Medical Library, London.

1 Venn, J. and J. A. *Alumni Cantabrigienses*, 1922, vol. 1, p. 375.

doubtedly a royalist; he may well have gone abroad to finish his education, and his medical degree was almost certainly obtained at one of the continental universities. There is little doubt that this was genuine. His attacks on quacks and his defense of the College of Physicians are such as to make us wonder why a Cambridge man who was practising in London and who published views so agreeable to the College should not be numbered among its Fellows. He obviously detested Cromwell's Commonwealth and although he was only thirty-one when he published his book of poems he speaks of himself as being 'in retirement.' At the time of the Restoration he addressed "loyall stanzas" to Charles II and when, in 1661, he appealed for arrears of income which had been withheld because of his loyalty to the King, he was awarded £80. His standing as a qualified practitioner is confirmed by the fact that on 12 April 1665 he joined with Jeremiah Astell, M.D., and R. Barker in certifying the license to practise granted by the Bishop of London to John Dabbs, M.A. (physician), of St. Giles beyond Cripplegate.[2] Beyond this date, when he would still have been only forty years of age, I have been unable to find any trace of him.

An examination of the voluminous literature on Harvey and his work failed to discover a single mention of Collop or his poems; he appears to be unknown to those who have written on the relations between medicine and literature and his name is not included in the list of medical poets in Monro's comprehensive work.[3] A search of the histories and bibliographies of English literature revealed that he was equally unknown to the literary historian until 1921, when John Drinkwater, who had found a copy of the poems in a London bookshop, published an article hailing him as "an unknown poet" of considerable merit,[4] but even Drinkwater's eulogy failed to arouse more than slight interest in Collop or his work. Being concerned only with Collop's literary virtues, Drinkwater failed to appreciate the interest of the medical poems and does not mention the poem on Harvey. "Collop was," he tells us, "a doctor of medicine, and freely carried his professional knowledge with him to his art. Many of his poems are loaded with anatomical conceits unintelligible to the lay mind. . . . The prevalence of party

2 Bloom, J. H. and James, R. R. *Medical practitioners in the Diocese of London, licensed under the Act of 3 Henry VIII, C.11. An annotated list.* Cambridge University Press, 1935. p. 45.

3 Monro, T. K. *The physician as man of letters, science and action.* 2d ed. Edinburgh and London, Livingstone, 1951.

4 Drinkwater, J. An unknown poet. *Yale Review*, 1921, *10*, 323-337. Reprinted in *A book for bookmen.* London, Dulau, 1926, pp. 117-134.

and doctrinal verses, with a cloud of dispensary fumes, makes it, indeed, very doubtful whether a full reprint of Collop's book would do him any service. He is notably a poet for careful selection, and the poems of which I am chiefly to speak are those that might be recommended to such a volume; but he was so good a writer that even his poorest pieces are apt to contain remarkable lines or passages. As will be seen, it is at the end of the book that he comes to his full stature, achieving there some half-dozen lyrics that seem to me to stand with the very best of seventeenth-century poetry."[5]

There can be no doubt about the quality of some of Collop's poems. He belongs to the 'metaphysical' school of English poets whose highly concentrated style of writing, with obscure allusion and imagery, is paralleled by that of some of our modern poets who have been strongly influenced by their seventeenth century predecessors. John Donne often begins his short poems with a couplet which immediately shocks the reader into awareness, and the simple language of Herbert or Vaughan often garbs the most subtle conceits; John Collop, who began one of his poems with the lines

> Each day a market is, where we do buy
> Or unto sale expose eternity.

should certainly be numbered among their following. The two poets, Richard Crashaw and Richard Lovelace, had both gone through Charterhouse only a few years before him. Crashaw was at Pembroke Hall and was a fellow of Peterhouse while Collop was an undergraduate; he must surely have known his fellow-Carthusian and may well have encouraged him to cultivate his talent for verse. Both were firm adherents to the royalist cause, for Crashaw was expelled from Peterhouse in 1643 for refusing to accept the Solemn League and Covenant and died at Loretto after turning Roman Catholic. Lovelace went to Oxford from Charterhouse, but his loyalty to the King earned him a term of imprisonment in 1642, when he wrote his celebrated lines, "Stone walls do not a prison make. . . ." He did not die until two years after the publication of Collop's poems, so that he too may have influenced their writer.

Having brought together the few ascertainable details of Collop's career and sketched in his social and literary background, we must turn to the volume itself for a more intimate glimpse of the

[5] *Op. cit.*, p. 119.

man and, finally, for the group of poems which are the reason for this note.

The title-page of the work reads: *Poesis Rediuiua:* / OR, / POESIE / REVIV'D. / *BY* / JOHN COLLOP *M.D.* // *Odi prophanum vulgus & arceo.* // *LONDON,* / Printed for *Humphrey Moseley,* / and are to be / sold at his Shop at the *Princes Armes* in S.*Pauls* / Church-yard/. 1656. /

Wing traced eleven copies,[6] and although there are certainly a few more in English libraries, the book must be considered a rarity. It is dedicated to that Henry [Pierrepoint], Marquis of Dorchester [1606-1680], who, after recovering from a serious illness in 1649 under the care of Harvey, Prujean, and Scarborough, began to study medicine himself, was admitted a Fellow of the College of Physicians in 1658, a Fellow of the Royal Society in 1663, and left to the College his splendid library.[7] One of the most learned men of his time, he suffered in the King's cause and had little reason to look kindly on the 'hydra-headed mob.' He probably appreciated the dedicatory epistle in which Collop wrote:

> . . . Nor is Poesie unworthy of your Patronage, which a Sir Philip Sidney prais'd, our seraphick Donne us'd, the learned Scaliger, and he who makes all praises modest, the excellent Hugo Grotius labour'd in. . . . As a tribute due to honour, I present these besprinklings of a retirement, while Democritus-like I laugh at the shittle-cock world, and exquire the causes of the spleen in the beast, the Rabble; which will invite some who *Abderitanae pectora plebis habent* the mad Rabble, and those plebeian heads, who are a degree above them in their Clothes, not in their intelligences, to accuse me of phrensie: Yet an Hippocrates (the more refin'd spirit) will pass intainted with the aire of popular displicencies, since the Temples of Virtue and honour want not their sacrifices.

Of the 128 poems in the book, Drinkwater considered that about 60 were worthy of serious consideration. Some of them, such as "On Retirement" and "The Pleasures of the World," come strangely from one so young; but "The Praise of his Mistress," "The Lady Singing," and "To a Painted Lady" seem more in keeping with his years. The closing couplet of the last named is worthy of Donne:

> 'Tis neither marble, gold, nor paint,
> But the Adorer makes the Saint.

[6] British Museum (Thomason Coll.), Oxford (Bodleian, 8° M.5 Art BS(3).), Cambridge (University Library and Peterhouse), Huntington, Newberry, Library of Congress, Harvard, Yale, Princeton, Williams College (Chapin Library). Curiously enough, there is no copy in the Dorchester Collection in the library of the Royal College of Physicians.

[7] See *Dictionary of national biography* (PIERREPOINT, Henry); Munk's *Roll of the Royal College of Physicians,* vol. 1, p. 281.

We must assume that the group of medical poems are included among those which Drinkwater considered 'negligible,' but since they express the views of a thoughtful, witty, and intelligent man on some of the leading medical topics of his time, they are by no means negligible to the medical historian. They are 24 in number and fill pages 46-62 of the volume. A list of their titles will give some idea of the topics on which he wrote:

Man a Microcosm (46)
Of the Blood (46-7)
On the Humours (48)
On the Elements (48)
Against Phlebotomy to a Leech (48-9)
For Phlebotomy (49)
A Piss-pot Prophet (49-51)[8]
To a Gigger to Padua, Valentia, and Leiden Doctors (51)
On Suburban non-Licentiates, who Fox-like call the Colledge grapes sour (52)
On the excellent Dr. Glisson (52)
The Sequestred Priest pidling in Physick (53)
The fugitive Chymick (53)
On sigils (53)
On the Astrologicall quack (54)
Oglio of quacks (54-5)
On Noah Bigg's vanity of the Craft of Physick (55-6)[9]
On Noah Biggs (56)
On Fontinels (56-7)
On Van Helmont (57)[10]
On Doctor Harvey (57-8)
On Dr. George Ent (59)
On Doctor Brown. His Religio Medici and vulgar errors. (60)[11]

[8] Uroscopy seems to have been the most popular resource of the charlatan under the Commonwealth. In 1655 there was published *The pisse-prophet, or certain pisse-pot lectures. . . .* By Tho. Brian. London, S. G. for R. Thrale. This was an exposure of the quack's methods.

[9] The full title of the work by Biggs is *Mataeotechnia medicinae praxws. The vanity of the craft of physick. Or, a new dispensatory. Wherein is dissected the errors, ignorance, impostures and supinities of the Schools, in their main pillars of purges, blood-letting, fontanels or issues, and diet, etc., and the particular medicines of the shops. With an humble motion for the reformation of the Universities, and the whole landscap of physick, and discovering the Terra incognita of chymistrie.* London, for E. Blackmore, 1651.

[10] Collop's opinion of Van Helmont is aptly expressed in the closing couplet of this poem:

> But oh! while errors troops *Van* rashly charges,
> Error him Captive takes, who truth inlarges.

[11] It would be a pity not to hear what Collop has to say of the celebrated Sir Thomas Browne and I quote the opening and closing lines:

> *Religio Medici* though the world Atheism call,
> The world shows none, and the Physitian all.
> More zeal and charity *Brown* in twelve sheets shows,
> Than twelve past ages writ, or th' present knows . . .
> . . . Folli's unmasked, and errors bald pate show'n,
> *Brown* others errors, others write their own.

On Dr. George Bowle of Oundle (61) [12]
On the death of his inviscerately affected friend Richard Watson Esq; Chyrurgeon to his late Majesty of England (62) [13]

The titles alone show us that Collop admired and upheld all that was best in medicine in his day; he defended the College of Physicians ("the Tower of truth") and its leading fellows, and he lashed out at the quacks and unlicensed practitioners:

> Physitians once were Children of the Sun,
> Now night, and earth need cover what is done.[14]

That his views were based on an intelligent appraisal of current advances and were not merely an expression of servile orthodoxy is made quite clear by the fact that he not only accepts Harvey's new physiology but emphasizes its revolutionary significance. He had read and admired the more recently published *De generatione* as well as the *De motu cordis* and his observations on both represent the earliest reference to Harvey's work in English literature. Dryden's lines[15] which have hitherto held this place of honour were still unwritten and were not published until seven years later, in the same year as Cowley's fine "Ode upon Dr. Harvey."[16]

In dedicating his essay on the circulation to Charles I, Harvey had called the heart "the sun of the microcosm," an image which he later, in the *De generatione,* transferred to the blood itself. In Collop's poem, "Man a Microcosm," occurs the line,

> To circle 'bout the world the blood's a Sun,

and the same image is developed in the poem immediately following, "Of the Blood." This is so charged with other leading ideas of Harvey's, for example, the primacy of the blood, the blood as the seat of the soul, and even specific expressions of Harvey's, that it is worth comparing the poem with the passage in the *De generatione* on which it is undoubtedly based.

12 George Bowle was a Fellow of the College of Physicians. See Munk's *Roll,* vol. 1, p. 332.

13 Richard Watson (Wateson) was a member of the Court of Assistants of the Barber-Surgeons Company; in 1644 he was declared a "Papist and Delinquent" and his property seized. See Young, S., *Annals of the Barber-Surgeons,* 1890, pp. 139-140.

14 "Oglio of Quacks," p. 55.

15 In the epistle preceding Walter Charleton's *Chorea Gigantum,* 1663, Dryden wrote:

> The *Circling* streams, once thought but pools, of blood
> (Whether Life's fewel or the Bodie's food)
> From dark Oblivion *Harvey's* name shall save.

16 In *Verses written upon several occasions,* London, For H. Herringman, 1663.

In the essay "On innate heat" in the *De generatione* we read,

> . . . the remarkable virtues which the learned attribute to the spirits and the innate heat belong to the blood alone. . . . The blood considered absolutely and by itself, without the veins, in so far as it is an elementary fluid, and composed of several parts—of thin and serous particles, and of thick and concrete particles called cruor—possesses but few, and these not very obvious virtues. Contained within the veins, however, inasmuch as it is an integral part of the body, and is animated, regenerative, and the immediate instrument and principal seat of the soul, inasmuch, moreover, as it seems to partake of the nature of another more divine body, and is transfused by divine animal heat, it obtains most remarkable and most excellent powers, and is analogous to the essence of the stars. In so far as it is spirit, it is the hearth, the Vesta, the household divinity, the innate heat, the sun of the microcosm, the fire of Plato; not because like common fire it lightens, burns, and destroys, but because by a vague and incessant motion it preserves, nourishes, and aggrandizes itself. It farther deserves the name of spirit, inasmuch as it is radical moisture, at once the ultimate and the proximate and the primary aliment, more abundant than all the other parts. . . .
>
> Since the blood acts, then, with forces superior to the forces of the elements, and exerts its influence through these forces or virtues, and is the instrument of the Great Workman, no one can ever sufficiently extol its admirable, its divine faculties.
>
> In the first place, and especially, it is possessed by a soul which is not only vegetative, but sensitive and motive also; it penetrates everywhere and is ubiquitous; abstracted, the soul or the life too is gone. . . . The blood, therefore, even as the soul, is to be regarded as the cause and author of youth and old age, of sleep and waking, and also of respiration; all the more and especially as the first instrument in natural things contains the internal moving cause within itself.[17]

And here is Collop's poem:

Of the Blood

Poets feign *Phoebus* blushing sets in red,
While he descends down to his watery bed.
Sure in these purple streams the Sun doth glide,
And in his Crimson Chariot blushing ride,
While he doth circle through the lesser world,
Through veins of earth in strange *Meanders* curl'd.
Now in a full tide channels doth disdain,
Flows into flesh, and then ebbs back again.
Thus blood, Sun-like, gives motion, life and sense,
Spirit, and innate heat are nought from hence.
Distinct from Blood, who can the Soul ought call?
'Tis all in every part, and all in all. . . .
How of the body is the Soul the act,
When without it no body is compact?
Do we our senses borrow from the brain,
When before it our senses do remain?
Or is the heart or liver shops of blood,

[17] Harvey, W. *Works*, tr. Willis. London, Sydenham Soc., 1847, pp. 510-511.

When before either is a purple flood?
Here is that *Plato's,* here that vestal fire
Kindled by Sun-beams, which can ne're expire.
Take away heat, 'tis *Cruor* and not blood,
Streams of impurities issue with this flood:
Ouse into flesh, and out by Ulcers run:
Yet ne're were blood, no nature took from th' sun.
Though blood shews like a heat enamell'd cloud,
Corruption with discolouring don't shrowd.
Lord, what is man thou should'st thus mindeful be?
Placing in him this tutelar Deity.
Water and earth, poor man, at best but mud;
By th'Quickning ray of heav'n turn'd flesh and blood.
When thou but tak'st of heav'n this light away,
That which before was flesh and blood, is clay.
Gods Tabenacle thus plac'd in the Sun,
That Giant races must with th'whole world run.

Some of the other poems, apart from the one in Harvey's honour, contain lines referring to Harvey's reputation and achievements. In "A Piss-pot Prophet," the quack who bases all his practice on uroscopy, speaking in the first person, rails against the College of Physicians and its most celebrated fellow:

. . . To trust in this [i.e., uroscopy] the College doth forbid,
Vile men would prelate-like have knowledge hid.
I never durst approach the Colledg near,
They Bishop like do place an Image there,
Their Idol-*Harvy* of the Serpents breed,
To break his head denys the woman seed.
We're wonderfully made the Scripture saies,
Yet this wretch how we're made would show the waies;
Nay, Conjurer-like makes Circling in the blood,
I know not why, but sure it can't be good.
What spirit 'tis he trades with is unknown
Distinct from blood he will no spirits own.
Out of five senses too he would perswade,
He need add more, your senses are decaid. . . .

The epigram "On the excellent Dr. Glisson" couples Glisson's name with Harvey's:

. . . Knowledge enervate did and strengthlesse lye,
Til *Glisson* use did to the nerves supply.
The spirit more refin'd may now in vain,
Knowledge ith' circle, not progresse, complain:
Harvy, and *Glisson,* will force all confesse
Knowledge by circling, now's in the progresse.

Turning aside from the enthusiasm of the 'chymical' philosophers to the more promising lines laid down by Harvey, Collop writes "On Noah Biggs":

By the spirit more though Chymistry can show,
Than by't Enthusiasts of the age do know,
Though ages dreamd, and th' aged dreamers be,
We that are young men do no Visions see.
To glean truth see in *Harvy Harves* here,
Themselves in him the Colledge pillars rear.
No more of every wind of phancy sport,
He gives them truth, and gives them reason for't.
Yet thou dear *Biggs* so well of ill hath writ,
He who can't praise thy truth, may praise thy wit.

The following poem, "On Fontinels," refers again to Harvey without naming him:

... Who truth immersed would pluck out of the pit,
Not only peeps, but doth exantlate it.
To the first moving vesicle tracts the blood:
Hath ebbing, flowing, circling understood:
Whence our impurities spring, knows every mine:
Not fights 'bout words, but can the things define . . .

And so, finally, to the two poems on Harvey and Ent, which must be quoted in full, for the second is as much in praise of Harvey ("our Phoenix") as of Ent himself:

On Doctor Harvey

What, can one pillar onely be thy due,
The Colledge pillar, and truths pillar too?
Had we *Seth's* pillar whose sight *Joseph* feigns,
Perusing thine, 'twould scarce requite our pains.
Non datur ultra Hercules pillars show,
Beyond a *Hercules* labours thou dost go.
Seav'n headed *Hydra,* error multiply'd,
Thou need'st no Club, thy knife can soon divide:
Augean filths no work when vy'd with thee,
Do'st cleanse the Jakes of all antiquitie,
All truths before thine, did like heat-drops fall,
Vanish'd so soon, scarce seen, or known at all.
Thou set'st up sail, swim's through the purple flood,
Which blush'd before, 'cause never understood.
Thou circlest through our Microcosm, and we
Learn more than th' world, our selvs, new worlds by thee.
Knowledge was eaten through with ages rust,
And the Serpent now would cheat us with his dust;
Most do an apple phancy, knowledge fruit,
Say but an *Harvey,* we assent unto't.
Yet here we knowledge gain without a death;
Death onely opens us a way to breath;
Enabled by the cunning of his knife,
He Cherubin like doth guard the tree of life.
Above the milky way in glory shine,
Lend humane nature lustre more divine;

Those lesser stars, a *Peckquet, Bartholine*
Lose all their glory, when by't vy'd with thine;
They babes in Physick by thy milk may please,
Thou open'st veins for cure of truth's disease.
Art natures midwife, stripst her Callow brood,
And new attirest to enrich our blood.
What need we pillars unto *Harvey* raise,
Who rears himself a Pyramid of praise?
To issue wanting *Absalom's* Pillars rear,
Each generation will give him an heir.
While drops of blood can channel in a vein,
Truth's bloody victory will him trophies gain.

On Dr. George Ent

Perfum'd with spices, when our Phoenix dies,
May'st from his ashes glorious arise.
Thy name speaks, being bettered by thy art,
Non ents in knowledge, may thy skill impart.
'Bove aged Dons whose bushes figure time,
Yet bearded Meteors all their lights from shine.
From lesser stars we do expect no light,
Nor Comets from the dregs of phancies bright;
Of truths succession maist thou Herald be,
Proclaim her warres, her rights, and pedigree,
While we our *Williams* Conquest do proclaim,
Not Conqueror of a Land, but whole worlds name.
Intitled to it by each drop of blood,
Which posting round proclaims his title good;
From th' Tyrrany of ignorance them freed,
While his dissecting hand made errors bleed;
Great *Harvy's* second, teeming Natures friend,
To nature and her Midwife thy hand lend;
Open thou natures books, and teach them read,
Can onely open veins to make truth bleed.
Lash whimp'ring folly; answ'ring at thy lash,
Whip her untill she gigs out all her trash.
Beat all the Hectors rise ith' whores defence,
Till prejudice is Captive led by sense.
Thou nothing dost, if all dost not outdo,
High treason against nature 'tis in you,
If from a Sun in Knowledge no light be,
Nature must suffer by *non Entitie.*
Lesse then perfection by thy name's not ment,
'Tis onely sinful folly's a *non Ent.*[18]

[18] As Drinkwater remarked, Collop was ill-served by his printer, especially in the matter of punctuation. I have amended this only in one or two instances where the text as printed made nonsence. There are obviously many other passages which could be improved by similar emendation, but the text is given as in the original. *'Harvy Harves'* in line 5 of the poem "On Noah Biggs" should have been, to judge from the preceding verb "glean," *"Harvey's* harvest."

Medical Poems From John Collop's *Poesis Rediviva* (1656)*

CONRAD HILBERRY**

JOHN Collop, physician, poet, and pamphleteer, was on the fringe, at least, of that group of physicians who, stimulated by William Harvey's example, made striking progress in basic physiological research during the first half of the seventeenth century. Collop's praise of Harvey is unqualified, and he seems to have been personally acquainted also with Dr. Francis Glisson, Dr. George Ent, and Dr. George Bowle. He certainly knew the work of Jean Pecquet, Thomas Bartholin, Jean Baptiste van Helmont, and Sir Thomas Browne. Like some others of these physicians, Collop mistrusted phlebotomy and purges, fontanels, defluxions, and the whole theory of bodily humours. His poems attack quacks of all varieties from the astrological quack, who assigns each herb to a house in the Zodiac and reads its properties in the stars, to the pompous physician who exposes his own ignorance in a long and ominous diagnosis worthy of one of Molière's eloquent medical men.

Little is known of Collop's life. According to *Alumni Cantabrigienses,* he was admitted as a pensioner at Pembroke College on 14 October 1641, at the age of sixteen. He was born at Flitwick in Bedfordshire (in 1625, if the other figures are correct), the son of John Collop, a mercer. In 1661, when an M.D., he appealed for arrears, withheld for his loyalty, and received £80.

Collop speaks as a physician and signs himself "M.D." on the title-pages of his books, but I have been unable to trace him to a medical school. His name does not appear in Munk's *Roll of the Royal College of Physicians,* and the librarian of the Royal College can find no evidence of his having been licenced by the College, though his poem "On Suburban non-Licentiates" is a biting attack on unlicenced practitioners.

According to Reginald L. Hine's *History of Hitchin* (pp. 209-210, 222), Collop lived in Hitchin, Hertfordshire, during the years in which he was writing *Poesis Rediviva* (1656), *Medici*

* This edition was prepared as a Ph.D. thesis project under the direction of Professor Merritt Y. Hughes at the University of Wisconsin.

** DePauw University, Greencastle, Indiana.

Catholicon (1656—a tract advocating universal toleration in religion), and *Itur Satyricum* (1660—stanzas welcoming the Restoration). A marriage allegation entered with the Archbishop of Canterbury (*Harleian Society Publications,* vol. 34) for "John Collop, of St. Dunstan in the West, London, Doctor of Physic, Widower," and "Anne Evington, of Horse-Heath, county Cambridge, Spinster," proves his residence in London in 1676. On this evidence his dates may be changed from the customary 1625-post 1660 to 1625-post 1676.

*Man a Microcosm**

Natures Compendium, th' worlds Epitome,
Our flesh is earth, our blood is as a Sea.
Have heav'n in Knowledge; Soul of Gods a ray,
Which in the night of flesh breaks forth a day.
What light without, that knowledge is within,
Through th' eyes the windows of our Souls let in.
To circle 'bout the world the blood's a Sun,
The Stars the senses, which their courses run.
Motions and perturbations of the minde,
Resemble tempests, thunder, lightning, wind,
Which in our aëry Region do arise,
To cloud the minde, and so obscure the Skies:
These on the blood Commotions once begun,
We lose th' effect of light by th' clouded sun.
Tumors like Meteors in our bodies rise,
The exhalations of impurities:
And in a Collique or Hysterique fit,
We feel pent wind a Earthquake make in it.
Congealed slime like Thunder-bolts, we finde
By heat of reins in clouds of flesh confin'd.
Our minde the day is, and our flesh the night,
Death is but darknesse, and our life the light.

---

*Of the Blood***

Poets feign *Phoebus* blushing sets in red,
While he descends down to his watery bed.
Sure in these purple streams the Sun doth glide,
And in his Crimson Chariot blushing ride,
While he doth circle through the lesser world,
Through veins of earth in strange *Meanders* curl'd.
Now in a full tide channels doth disdain,
Flows into flesh, and then ebbs back again.
Thus blood, Sun-like, gives motion, life and sense,

* All textual criticism has been placed at the end of the poems (pp. 396-411).
** See pp. 397-9.

Spirit, and innate heat are nought from hence.
Distinct from Blood, who can the Soul ought call;
'Tis all in every part, and all in all.
Though Nature seems restor'd by Cock-white-broth,
It is a Sun-beam Chariots in the froth.
Thus man can't get a man, unlesse the Sun
Club to the act of Generation.
'Tis light is life; 't may place change, never dies,
And by its nature onely multiplies.
How of the body is the Soul the act,
When without it no body is compact?
Do we our senses borrow from the brain,
When before it our senses do remain?
Or is the heart or liver shops of blood,
When before either is a purple flood?
Here is that *Plato's,* here that vestal fire
Kindled by Sun-beams, which can ne're expire.
Take away heat, 'tis *Cruor* and not blood,
Streams of impurities issue with this flood:
Ouse into flesh, and out by Ulcers run:
Yet ne're were blood, no nature took from th' sun.
Though blood shews like a heat enamell'd cloud,
Corruption with discolouring don't shrowd.
Lord, what is man thou should'st thus mindeful be?
Placing in him this tutelar Deity.
Water and Earth poor man, at best but mud;
By th' quickning ray of heav'n turn'd flesh and blood.
When thou but tak'st of heav'n this light away,
That which before was flesh and blood, is clay.
Gods Tabernacle thus plac'd in the Sun,
That Giant races must with th' whole world run.

---

*On the Humours.**

A *Tetrasyncrasy* must of humours be;
Nature from discords produce harmony.
How wisely th' bloody masse is understood?
Two Cholers, black and yellow, phlegm and blood.
Phlegm is so crude it scarce bloods nature takes;
Blood Choler turns, but Choler ne're blood makes.
Yellow to black by heats exuberance tends:
Black into none, see where perfection ends.
When Natures work onely Concoction is,
To gain perfection we arrive at this.
O happy age from imperfections free,
Perfections sure mopish or mad to be.

* See pp. 399-400.

*On the Elements.**

To answer Humours who four Elements chose,
Had need the fift, their quarrels to compose.
Sure it is Love doth all together knit;
Love made the world, and Love perserveth it.
Things diff'rent are, but nothing contrary is,
But as intended, or it is remisse.
Ah! why should Med'ciners in their art agree,
Since Natures self's but Contrariety?

---

*Against Phlebotomy to a Leech.***

Philosophy ends where Physick doth begin:
'Tis strangely true, for few admit it in.
Tell stories of Corruption of the blood;
What's once corrupt, can it return to good?
To th' habit from privation, how's recesse?
Phlebotomy's Key not loosing rottennesse.
Or opening, can't distinguish good from bad?
Would each blood-sucking Leech the knowledge had.
The treasury of life they'd not exhaust,
Take th' price of blood, while life with blood is lost.
To Natures countermining not intent,
To let death in, and life out give a vent.
More merciful Turks thus blood do never spill,
Under pretence of help, nor do they kill.
Lest to his bloody art th' Leech too much trust
To take him off we need from graves fetch dust.

For Phlebotomy.†

The Courses Nature doth in Women take
To open veins, shall we in men forsake?
Where Nature dictates, who will not submit?
She keeps her Monthly terms to plead for it.
Shee'll argue *a priori* by the Nose;
And by the Breech *a posteriori* shows.
When Natures self doth once turn Critical,
I pray resign, no Criticks be at all;
'Gainst all Phlebotomy who plead, sure jest:
In th' mood they plead for to refute it best.

* See p. 400. ** See pp. 400-01. † See p. 401.

*A Piss-pot Prophet.**

See th' man of *Recipes* how his Cloak is lin'd!
Sure th' insides rich, where we such linings finde.
Can strut, not gravely, with an ominous look,
Like *Mahomet* when from th' Dove he Counsel took,
Consults with his *Mustachio's* 'fore he's heard;
Surely he strokes his wisdome from his beard.
Your liver's foul, and stomach, pains ith' heart,
We *cardialgia* call it men of art.
Your spirits natural; vital, animal be,
And I'me afraid, not from obstructions free.
Would of erratique griefs you causes know?
Your livers hot, cold stomach, thence to the brain,
Vapors arise in Clouds, showre back again.
You are hydroptick, nay, Cachectick too,
I strangely fear a discrasy in you.
Oh, oh my heart, my heart doth down retreat
Their monstrous purges you (learn'd sir) repeat.
They *Panchymagogi*, and *Catholicons* be;
And *Diaphænicon* th' rare Electuarie.
These are your purges man; the Bezar stone,
Brave Cordial, unto all but me unknown.
Have you a pain ith' stomach? yes, back and head?
Lord Master Doctor where have you this read?
Ith' urine man; by this I ev'n can know
Each step, and stair by which to bed you go.
Pisse takes the form of parts as it runs through,
I could no better know, was I in you.
Hence looking-glasses, Chamberpots we call,
'Cause in your pisse we can discover all.
Why this no lesse then *Aarons* brestplate is,
The Seminalities of all ills in pisse:
To trust in this the College doth forbid,
Vile men would prelate-like have knowledge hid.
I never durst approach the Colledg near,
They Bishop-like do place an Image there.
Their Idol-*Harvy* of the Serpents breed.
To break his head denys the woman seed.
We're wonderfully made the Scripture saies,
Yet this wretch how we're made would show the waies;
Nay, Conjurer-like makes Circling in the blood,
I know not why, but sure it can't be good.
What spirit 'tis he trades with is unknown
Distinct from blood he will no spirits own.
Out of five senses too he would perswade
He need adde more, your senses are decaid:
And th' world doth senses want to see deceit,
Both out of money and of life to cheat.
All like the frog to physick will pretend,
Would others cure can't their own croaking mend.

* See pp. 401-02.

To a Gigger to Padua, Valentia, and Leiden Doctors.*

Who giggs to *Padua,* doth *Montpelier* sent,
Creeps in, steals out, as if for theft he went:
If gains, sure steals in secret knowledge there?
Or th' French inspires him, or Italian air;
Or th' zany knowledge, waits on th' Gyants name?
Or the matter lurks in an impostum'd fame?
Or who's where wit is dealt, must need have share?
Peripatetiques Grand Philosophers were.
If you are Laden with exotique gold,
To come near th' Tower of truth you may be bold.
For Custom-sake unto the Colledge come,
Volleys of praise shall entertain you home:
Not gilt ore to deceive, with titles drest,
Gold need not fear for to endure the test:
Gold's the Suns Child, why do ye fear the light?
See how the bats do fear, and love the night!
Unplum'd and bloodlesse by the light they'r known,
In errors twilight flut'ring they'r unknown.
A darker shop befits their fucate drugs,
These suck'd not milk; but blood from stepdames dugs.

On Suburban non-Licentiates, *who Fox-like call the Colledge grapes sour.*

You're all Licentiates; though no licenc'd crew,
And titles which you paid for are your due;
Though you by Doctors names intitled be,
Onely to Folly in a high degree.
Letters of commendations fools may gain,
Which pockets carry, th' wise man's in his brain.
Honor's the wise mans bride, fools act a rape.
The Colledge-fruits are sour like the foxes grape;
These like the Dogs in errors darker night,
Bark at the Moon, but cannot catch the light.
Professors might to th' Colledge pupils be,
Gain what you want, in knowledge a degree.
They in arts rudiments could instruct a sage,
Knowledge her self is here in pupillage.
Shine out great lights, your beams for life display,
While death portending Comets blaze and slay.

* See p. 402. ** See p. 403.

On the excellent Dr. Glisson.*

Hic gliscit ars. Art may in vain intend,
Her nervs for knowledge, *Glisson* not her friend.
Knowledge enervate did and strengthlesse lye,
Til *Glisson* use did to the nerves supply.
The spirit more refin'd may now in vain,
Knowledge ith' circle, not progresse, complain:
Harvy, and *Glisson,* will force all confesse
Knowledge by circling, now's in the progresse.

---

*The Sequestred Priest pidling in Physick.***

Who's both sequestred here of state and wit,
He in revenge to th' world would murder it;
Cries destiny, God Author makes of ill,
When by a cruel ignorance he doth kil.
Jure divino will this calling have;
Luke a Physician the perogative gave;
Yet sure learn'd *Bard,* it wil the contrary teach,
Not you Physitians, make Physitians preach.

The fugitive Chymick.†

The Knave turns quack too, blow'd the chymist coal;
As if each blast, inspir'd their *Theophrasts* soul.
He talks of salt without a grain of wit;
But *Mercury's* sure ith' lightnesse of his wit;
Nor doth he want his Sulphur, he hath got
Against the state no less then Powderplot.
Or good from bad by *Pyrotechny* take,
Or else you poyson may for med'cine make.
Yet the best things corrupted the worst be;
Heav'n or hels spirits are in Chymistrie.

On Sigils.‡

For art of memory, signs on Planets set,
Teach men themselves, and Planets to forget.
Are plac'd on Sigils, maladies to cure;
By monsters, Ague-like they'r frighted sure.
If 'tis in matter, in all metalls power.
If in the form, the scorpion may devour.
More wisely *Theophrast* did *Magia* write
On's Sigil; and for foolery it endite.

* See p. 403. ** See p. 403. † See pp. 403-04. ‡ See p. 404.

*On the Astrologicall quack.**

At th' Colledge of the stars he did commence,
And Statesman-like will speak the houses sense;
Each house for mans use stranger herbs hath got,
To them they essence property, seed allot.
But is't not strange; when they so numerous be,
How all do with a fewer stars agree?
Each pil and potion too hath diff'rent sign:
Nature ith' stomach sure now can't refine.
Or ist since Heav'n stand still, and earth turns round,
We here are giddy, there no truth is found?
The Heav'ns a book is, where men wonders read,
The stars are letters, most a Christs Cross need.

---

*Oglio of quacks.***

We souls and bodies *Medicasters* have,
Both are hereditary, Father fool, Son th' knave;
Th' disease that's known, half cured some do say,
Now not to know't, to cure't's the ready way,
A fortunate Doctor though he hath no skill,
Wisely can cure, before he knows the ill.
Nay, ev'n his potion, knowledge can instil;
Who's cur'd by chance, a recipe gains to kill:
The triple tooth'd join with three recipes,
A sacred number can cure each disease.
Looking like the *Sceleton* stole from Surgeons Hall,
Having there Knowledge gain'd's Chyrurgical.
With *Solomons* Key, and's *Cabal* quacks the Jew,
And th' book whose name sure works *Nebolahu.*
Sputring-like th' Country quack with terms of art;
Who by pisse prophecying wonders doth impart.
The words sent th' *Syrian* King this wretch makes wise,
Another those were spoke in *Paradise;*
But oh see Locusts from the infernal pit,
Leech, Falkner, Huntsman, all for murder fit.
'Twixt man and beast there's now no difference made,
To th' bestial part since reason man betrai'd.
Physitians once were Children of the Sun,
Now night, and earth need cover what is done.
Wise *Lacedemon* would no quacks endure,
Themselves intitling unto natures cure.
A painter convert, Leech said Earth may hide
The faults I now make, th' former were espy'd.
While *Italy* did to *Adrian* complain,
Under pretence of help, their friends were slain.
The Pope reply'd, the Land would be too great,
These you devour, least you your selves might eat.
Thus cruelty passing uncontroll'd by Law,
Leeches by purse, and veins the heart blood draw.
Yet all *Egyptian*-like to Crocodiles pay
Devotion for requital do them slay.

* See pp. 404-05. ** See pp. 405-06.

On Noah Big's *vanity of the Craft of Physick.**

In *Noah Bigs* ark truth shall nere be sav'd,
Since for one truth preserv'd he twenty wav'd.
While you would physick purge, and purges too;
We need a purge of hellebore for you:
Like th' mad man living in a Seaport Town,
Thought all the ships came in the hav'n his own.
No ships but his at truths port hath arriv'd,
In waves of error drown'd, none else surviv'd.
Yet while he's gleaning up *Van Helmonts* scraps,
And the Dutch hogs head long since broch'd new taps,
Had he apprentise to an Alewife been,
By yest fermenting ale he more had seen.
The humors to ferment had better shown,
Then what *Van's* stronger phancy brews or's own.
Yet 'tis no matter though all Sciolists be,
Knowledg in Physiques occult quality.

---

*On Noah Biggs.***

By the spirit more though Chymistry can show,
Then by't Enthusiasts of the age do know.
Though ages dream'd, and th' aged dreamers be,
We that are young men do no Visions see.
To glean truth see in *Harvy Harves* here,
Themselves in him the Colledge pillars rear.
No more of every wind of phancy sport,
He gives them truth, and gives them reason for't.
Yet thou dear *Biggs* so well of ill hast writ,
He who can't praise thy truth, may praise thy wit.

On Fontinels.†

What though *Chymera's* all defluxions be,
That need to have an issues midwifrie;
He that doth good, though he the cause don't know,
There is no cause why he should lesse it do.
Corruption from a roweld horse doth flow:
'Cause th' Farrier knows not, why is it so?
Who truth immers'd, would pluck out of the pit,
Not onely peeps, but doth exantlate it.
To the first moving vesicle tracts the blood:
Hath ebbing, flowing, circling understood:
Whence our impurities spring, knows every mine:
Not fights 'bout words, but can the things define.
He who shows faults, to truth he is no friend:
But he who showing teaches to amend.

* See p. 406. ** See p. 406. † See p. 407.

Had the acute *Van-Helmont* faults thus shown,
He had cur'd ours, and not have made his own.
Nor while he proves all issues to be vain,
Prove onely so, the issue of his brain.
Let's Scholers all to *Patavie* be sent,
Where they for giddy fumes, give hogsheads vent.

---

*On Van Helmont.**

In luxury of wit there's more then needs:
And in the best of Gardens there's some weeds.
In *Helmonts* Paradise there's of life a tree,
By fruits of knowledge we may blinded be:
And while our imperfections we would smother,
Onely some figleaves take to make a Cover.
What few do, seems to know of what he writ,
Superfætation hath no abort wit.
'Bove Galens scurf, 'bove him whose scraps might feed
Sages, yet he a school boys latine need:
Yet to set th' Kernel off, let th' shel be foil,
If not much labour, *Theophrast* shew'd much oyl.
But oh! while errors troops *Van* rashly charges,
Error him Captive takes, who truth inlarges.

On Doctor Harvey.**

What can one pillar onely be thy due,
The Colledge pillar, and truths pillar too?
Had we *Seth's* pillar whose sight *Joseph* feigns,
Perusing thine, 'twould scarce requite our pains.
Non datur ultra Hercules pillars show,
Beyond a *Hercules* labours thou dost go.
Seav'n headed *Hydra,* error multiply'd
Thou need'st no Club, thy knife can soon divide:
Augean filths no work when vy'd with thee,
Do'st cleanse the Jakes of all antiquitie,
All truths before thine, did like heat-drops fall.
Vanish'd so soon, scarce seen, or known at all.
Thou set'st up sail, swim's through the purple flood,
Which blush'd before, 'cause never understood.
Thou circlest through our *Microcosom,* and we
Learn more then th' world, our selvs, new worlds by thee
Knowledge was eaten through with ages rust,
And the Serpent now would cheat us with his dust;
Most do an apple phancy, knowledge fruit;
Say but an *Harvey,* we assent unto't.
Yet here we knowledge gain without a death;
Death onely opens us a way to breath;

* See pp. 407-08. ** See pp. 408-09.

Enabled by the cunning of his knife,
He Cherubin like doth guard the tree of life.
Above the milky way in glory shine,
Lend humane nature lustre more divine;
Those lesser stars, a *Peckquet, Bartholine*
Lose all their glory, when by't vy'd with thine;
They babes in Physick by thy milk may please
Thou open'st veins for cure of truths disease.
Art natures midwife, stripst her Callow brood,
And new attirest to inrich our blood
What need we pillars unto *Harvey* raise,
Who rears himself a Pyramid of praise?
To issue wanting *Absaloms* Pillars rear;
Each generation will give him an heir.
While drops of blood can channel in a vein,
Truth's bloody victory will him trophies gain.

---

*On Dr. George Ent.**

Perfum'd with spices, when our Phoenix dies,
May'st from his ashes glorious arise,
Thy name speaks, being betterd by thy art,
Non ents in knowledge, may thy skill impart.
'Bove aged Dons whose bushes figure time,
Yet bearded Meteors all their lights from shine.
From lesser starrs we do expect no light,
Nor Comets from the dregs of phancies bright;
Of truths succession maist thou Herald be;
Proclaim her warres, her rights, and pedigree;
While we our *Williams* Conquest do proclaim,
Not Conqueror of a Land, but whole worlds name.
Intitled to it by each drop of blood;
Which posting round proclaims his title good;
From th' Tyranny of ignorance them freed,
While his dissecting hand made errors bleed;
Great *Harvy's* second, teeming Natures friend,
To nature and her Midwife thy hand lend;
Open thou natures books; and teach them read,
Can onely open veins to make truth bleed.
Lash whimp'ring folly; answ'ring at thy lash,
Whip her untill she gigs out all her trash.
Beat all the Hectors rise ith' whore defence,
Till prejudice is Captive led by sense.
Thou nothing dost, if all dost not outdo,
High treason against nature 'tis in you.
If from a Sun in Knowledge no light be,
Nature must suffer by *non Entitie.*
Lesse then perfection by thy name's not ment,
'Tis onely sinful folly's a *non Ent.*

* See p. 409.

On Doctor Brown.
His Religio Medici and vulgar errors.•

Religio Medici though th' world Atheism call,
The world shows none, and the Physitian all.
More zeal and charity *Brown* in twelve sheets shows,
Then twelve past ages writ, or th' present knows;
What *Paracelsus* brag'd of doth disclose,
He 'twixt the Pope and *Luther* might compose,
Though gut-inspired zelots bark at him,
He hath more knowledge then their Sanedrim.
Or the *Scotch* pedant a worm in every book,
To maim the words and make the sence mistook.
Dul lumps of earth not yet concocted mud,
In natures count scarce Cyphers understood.
Let these lick up the indigested phlegm
Which Cruder stomach'd *Sciolists* belch'd 'fore them:
Dog-like to vomits run and lick each sore,
Think learning to repeat what's said before.
While these can prize truths weapons by the rust,
Crawl with the aged serpent in the dust.
Shine out dispelling th' ages darker night,
Knowledge makes only Children of the light.
Folli's unmask'd, and errors bald pate shown,
Brown others errors, others write their own.

On Dr. George Bowle of Oundle.••

Nor shalt thou dearest *Bowle* oblivion take,
Since 'tis *Apollo* must a Poet make:
Thou every day dost circle like the Sun;
A course for natures reparation run;
Impart'st thy light to all, yet losest none;
Knowledge is th' Suns Child, true Philosophers stone.
Thou canst both trepane lungs, and open th' heart:
Whilst thou thy own dost to thy friend impart.
No dialect of nodds, thee Noddy speaks,
While th' hogshead fears a vent, lest all out Leaks.
Or knowledge at the best seems in a trance,
While plush is lin'd with sable ignorance.
Who'd not have's brain be trepaned by thee,
Thy own heads open, while thy tongue is free.
Nor thy self only but thy Art mak'st friends,
While Artists discords in the best musique ends.
Thou *Paracelsus* makest *Galens* friend;
While Chymicks now *Botanicks* do commend.
Mutual defects no longer they reveal;
Their own and others they conjoyned heal.
Yet thou from neither packhorse-like tak'st load,

• See pp. 409-10. •• See p. 410.

Come life, come death, to keep both pace and road.
We owe thy errors, not to thee, but times,
We owe the virtues, far above their crimes.
He knows *Bowl* little, much him disapproves,
But knows him not at all who him not loves.

On the death of his inviscerately affected friend
Richard Watson *Esq; Chyrurgeon to his late*
Majesty of England.*

Need they embalm, in Lead thus wrap thee dead,
My tears will re-embalm, my heart turn Lead?
Who take thy bowels out, sure take out mine,
They by a sympathy were no lesse then thine;
With an inviscerate dotage I did love;
Could not thy death ah then my bowels move?
Watson is dead, and with him buried art:
Ah who can cure the wounds made in my heart:
Who dying made could onely living cure,
How could he die, and I no death endure?
Who could with *Watson* in dissections vy,
Who dying makes, his friend *Anatomy*.
Each part was his, grief will asunder take,
And of his art will me a monument make.
Could I survive, I'm quickned by his fame,
How can he dye who writes but *Watsons* name.

NOTES

There is only one text of *Poesis Rediviva*. I have compared the copies in the British Museum, the Library of Congress, the Harvard Library, the Yale Library, and the Huntington Library with the Bodleian copy from which the text here was taken. They are identical.

A good many printer's errors found their way into the text. I have corrected those errors in spelling which are unquestionably misprints; the punctuation I have corrected only in a few places where it was obviously wrong and seriously misleading. In every case I have indicated in the notes the original reading.

Man a Microcosm.

Title. The idea that man is "th' worlds Epitome" is to be found everywhere at this period. See, for instance, Sir T. Browne's *Religio Medici*, II, 10, 11. Collop uses the microcosm figure in a different way in his prose tract, *Medici Catholicon* (1656), p. 134: "Nor could I bee lesse then a world in whom all the Monsters of *Africa* have conven'd, and all the *African* tincture in my blacker impieties. I have had the blindnesse of *America* to sacrifice to the Devill *ne noceat*, by complying with aberrances: having with *Asia* lost a reall Paradise by *Euthymy:* could challenge affinity with Mahometism, and dream of a Paradise in carnall concupiscencies. Nor hath any part of *Europe* been defective to the complement of this Microcosm: Papist, Reformist, Subreformist, Familist, Atomist; all the phancies which crumble into factions and mince into divisions, while old time is forc'd to chew the cud, and raise up the stubble and chaffe of whimzies, swallowed fourteen ages past have concentred in me: and met in this Masse of antipathies I carry about me."

Line 3. *Soul of Gods a ray:* i.e., the soul is a ray of God. Such displacements of the normal sentence order occur frequently in Collop.

* See pp. 410-11.

5-6. *What light without, that knowledge is within,*
Through th' eyes the windows of our Souls let in.

Possibly *What* should be "That": When the light of God is without, there will be knowledge within, for God's light enters the soul through the windows of the eyes.

9-12. *Motions and perturbations of the minde,* etc.

Compare Jean Baptiste van Helmont's *Oriatrike* (1662 translation, p. 418): "Paracelsus doth every where constantly perswade, that we ought to feel the Diseases and defects of all things, because we are hitherto every way an extract of the whole universe. . . . For so he will have us to contain winds and their varieties, our wringings of the bowels also, to answer unto the tempests of the Air."

15-16. *Tumors like Meteors in our bodies rise,*
The exhalations of impurities.

Meteors were regarded as due to the effect of the air's hot or cold regions on exhalations from the earth. See, for example, Sylvester's *Du Barta's Second Day of the First Week* (1605):

If th' Exhalation hot and oily prove,
And yet (as feeble) giveth place above
To th' Airy Regions ever-lasting Frost,
Incessantly th' apt-tinding fume is tost
Till it inflame: then like a Squib it falls,
Or fire-wing'd shaft, or sulphry Powder-Balls.
But if this kind of Exhalation tour
Above the walls of Winters icy bowr
'T-inflameth also; and anon becomes
A new strange Star, presaging wofull dooms.

17-18. *And in a Collique or Hysterique fit,*
We feel pent wind a Earthquake make in it.

Compare Pliny (II, 81): "I certainly conceive the winds to be the cause of earthquakes; . . . nor does it ever happen until after great winds, the gust being pent up, as it were, in the fissures and concealed hollows. For the trembling of the earth resembles thunder in the clouds; nor does the yawning of the earth differ from the bursting of the lightning; the enclosed air struggling and striving to escape." And Seneca, *Quaestiones Naturales,* V, 4, on the origin of winds: "Sometimes the earth herself emitts a great quantity of air, which she breathes out of her hidden recesses. . . . A suggestion has been made which I cannot make up my mind to believe, and yet I cannot pass over without mention. In our bodies food produces flatulence, the emission of which causes great offence to ones nasal susceptibilities; sometimes a report accompanies the relief of the stomach, sometimes there is more polite smothering of it. In like manner it is supposed the great frame of things when assimilating its nourishment emits air. It is a lucky thing for us that nature's digestion is good, else we might apprehend some less agreeable consequences." (Quoted in Grierson's note to Donne's *The Storme,* 1. 13.)

19-20. *Congealed slime like Thunder-bolts, we finde*
By heat of reins in clouds of flesh confin'd.

Compare Pliny, II, 43: "The vapour, which has arisen from the earth, being repelled by the stars, may produce thunder when it is pent up in a cloud."

20. *reins:* kidneys, with a pun on "rains."

Of the Blood.

The whole poem is built on the comparison of the blood in the microcosm to the sun in the macrocosm. William Harvey makes a similar comparison in the first sentence of the dedication of his *Anatomical Exercitations, concerning the motion of the heart and blood:* "The *Heart* of creatures is the foundation of life, the Prince of all, the Sun of their Microcosm, on which all vegetation does depend, from whence all vigor and strength does flow." (1673 edition, p. 2)

Line 1. *Poets feign Phoebus blushing sets in red.* See, for instance, Spenser's *Faerie Queene,* I, vi, 6, 6-7: "And *Phoebus* flying so most shameful sight, His blushing face in foggy cloud implyes."

4. *And in his Crimson Chariot blushing ride.* Here, as elsewhere in these poems, Collop borrows directly from Noah Bigg's *Vanity of the Craft of Physick* (1651). "According to Scripture, the *soul* or *vital* strength, rides in the Chariot of the bloud." (pp. 139-140)

9-10. *Thus blood, Sun-like, gives motion, life and sense,*
Spirit, and innate heat are nought from hence.

Compare Harvey's *Anatomical Exercitations, concerning generation* (1653): "therefore the *Soul* is *primarily* in that *primogenit particle* [i.e., the blood]; which *Soul* is the fountain and author of *Sense, Motion,* and *Life* of the whole. That therefore is the principle par-

ticle, from which the *vital spirit,* and *native heat* do descend into all the rest." (Ex. LI, p. 273)

11. *Distinct from Blood, who can the Soul ought call.* These physicians understood Leviticus 17: 11 to give scriptural authority to the idea that the blood is the seat of the soul: "For the life of the flesh is in the blood: and I have given it to you upon the altar to make an atonement for your souls: for it is the blood that maketh an atonement for the soul." See, for instance, Noah Biggs' statement in the note to 1. 4 above, or this from Van Helmont: "Therefore doth *Divine History,* in a singular and emphatique Elogy, call the *blood* the *Mansion of the Soul.*" (*Magnetick Cure,* p. 85)

12. *'Tis all in every part, and all in all.* Compare Harvey, *Anatomical Exercitations, concerning generation* (Ex. LI, p. 280): "And lastly, the *blood* doth so surround, and pierce into the whole *body,* and impart *heat* and *life* to all its *parts,* that the *soul* may justly be counted resident in it, and for his sake, *Tota in tota & tota in qualibet parte,* to be all in *all,* and all in every *part,* (as the old saying is.)" The idea that the soul is "all in all and all in every part" appears in Plotinus who describes the soul as "tota in toto et tota in singulis partibus." (*IV Ennead,* IX, 1) It becomes standard theology, reappearing in St. Augustine (*De Trin.* VI, 6), in St. Thomas (*Summa Theologica* I, Q. 76, Art. 8), and in many of the commentators (see Arnold Williams, *The Common Expositor,* p. 78).

13. *Though Nature seems restor'd by Cock-white-broth.*
Compare Noah Biggs, *Vanity of the Craft of Physick,* p. 105: *"Physitians, Mid-wifes, and others* given to Physick, crack much of the vertues of *Cock-broth.* But this will vanish away in *fumo,* like an old-wifes-dream; Broth of an old cock joined with herbs, is a particular of the Lady Ignorances hous-wifery."

15-16. *Thus man can't get a man, unlesse the Sun*
Club to the act of Generation.

An identical couplet appears in Cleveland's *The Author to his Hermaphrodite,* 11. 55-56, Berdan's edition, p. 99. The idea may have been suggested by Aristotle: "The efficient and chief and first cause is the circle in which the sun moves. For the sun as it approaches or recedes, obviously causes dissipation and condensation and so gives rise to generation and destruction." (*Meteorologica* I, 9, p. 346 b22) Or "For by a male animal we mean that which generates in another, and by a female that which generates in itself, wherefore men apply these terms to the macrocosm also, naming Earth *mother* as being female, but addressing Heaven and the Sun and other like entities as *fathers,* as causing generation." (*De Generatione Animalium,* I, 2, p. 716 a 18)

15. *get:* beget.

16. *Club:* The NED quotes Charleton, *Ephes. and Cimm. Matrons* (1651) 1668 ed., 60: "Convinced of her impotency to club with him in the Act of procreation."

17. *'Tis light is life.* See John I:4.

19. *How of the body is the soul the act.* This definition is ultimately from Aristotle (*De Anima,* II, 1, 412 b): "The soul is the first grade of actuality of a natural body having life potentially in it." St. Thomas restates the idea more fully (*Summa Theologica,* I, Q. 90, Art. 2, Obj. 2): "Every actuality of matter is educed from the potentiality of that matter; for since matter is in potentiality to act, any act pre-exists in matter potentially. But the soul is the act of corporeal matter, as is clear from its definition. Therefore the soul is educed from the potentiality of matter."

21-24. *Do we our senses borrow from the brain,* etc. Compare William Harvey, *Anatomical Exercitations, concerning generation* (Ex. LI, 1653, pp 273-4): "The opinion of some *Physitions* . . . is to be rejected (whereby they decree that the three *principal* and *eldest parts,* the *Brain,* the *Heart* and the *Liver,* do together spring out of the small bladders or bubbles) so neither can I assent to *Aristotle* himself, who concludes that the *Heart* is the *first genital* and *animate particle.* For the truth is, I am perswaded that this prerogative is onely due to the *Blood:* for the *blood* is it which is first seen in *Generation.* And that not onely in an *Egg* but in every *Foetus,* and *animal conception* whatsoever. . . . I conceive it consonant to reason that the *blood* is made before his receptacles . . . for the latter is made to be serviceable to the former." Or again (p. 280): "But it is so far from truth (which yet Aristotle and all *Physitians* affirm) that the *Liver,* or *Heart* is the *Author* of the *Blood:* that the contrary . . . is most manifest: namely, the *Blood* rather is the Author of the *Heart* and *Liver.*" Collop's phraseology may have been suggested by Biggs, who speaks of "the liver, the Shop and Forge of the four humours, as they are pleased to have it." (*Vanity of the Craft of Physick,* p. 177)

25-26. *Here is that Plato's, here that vestal fire*
Kindled by Sun-beams, which can ne're expire.

Collop might be thinking of the fire that cast the shadows in Plato's cave (*Republic* VII, 514-15). Or he might have had in mind the passage in *Philebus* (p. 29) which draws a

parallel between the elements in the universe and in man: "One instance will prove this of all of them; there is fire within us, and in the universe.

"True.

"And is not our fire small and weak and mean? But the fire in the universe is wonderful in quantity and beauty, and in every power that fire has?

"Most true."

A third possibility is Plato's use of the sun to represent the Idea of the Good in *Republic* VI, 508.

As for the vestal fire, it was the first duty of the Vestal Virgins to maintain and keep pure the eternal fire in the Temple of Vesta. Legend has it that Aeneas brought this fire with him to Rome from Troy. The kindling of the fire by sunbeams is probably Collop's own invention to turn the story more pointedly to his purpose.

27. *Take away heat, 'tis Cruor and not blood.* See Harvey: "And any man may plainly see, that the blood retaines heat . . . which heat when it is quite extinct, as the *blood* is then no longer *sanguis, sed cruor, Blood,* but *Gore;* so now no longer hope of returning back to *life.*" (*Anatomical Exercitations, concerning generation,* Ex. LI, 1653, p. 277)

31-32. *Though blood shews like a heat enamell'd cloud,*
Corruption with discolouring don't shrowd.

The idea is probably that stated by Noah Biggs (*Vanity of the Craft of Physick,* pp. 162-163): "By what signes do the schools judge of putrid bloud? Is it not from the colour, whiter, blacker, yellow, greenish, or brownish? . . . But we declare . . . if any one please to try and examine the bloud of two hundred common sound persons emitted in one day, which though many of them may be very unlike in aspect, colour, matter, and consistence, yet they shall be found to be equally usefull and profitable in healing."

33. *Lord, what is man thou should'st thus mindeful be.* See Psalms 8:4.

34. *Placing in him this tutelar Deity.* Compare Harvey: "nor will this opinion seem so improbable and absurd to any, as once to *Aristotle;* namely, *That the Blood, like a Tutelar Deity, is the very soul in the body.*" Marginal note: *De Anima* 1.1, c.2, (*Anatomical Exercitations, concerning generation,* Ex. LII, 1653, p. 283)

39-40. *Gods Tabernacle thus plac'd in the Sun,*
That Giant races must with th' whole world run.

See Psalms 19: 4-6: "In them the heavens hath he set a tabernacle for the sun, Which is as a bridegroom coming out of his chamber, and rejoiceth as a strong man to run a race. His going forth is from the end of the heaven, and his circuit unto the ends of it."

39. *Tabernacle.* Text: "Tabenacle."

On the Humours.

Hippocrates first stated the theory of the bodily humours; Galen developed it, associating each humour with one of the four elements. Thomas Linacre's Latin translation (1521) of Galen's *Of Temperaments* circulated the theory in England, but it was Linacre's pupil, Sir Thomas Elyot, who did most to popularize the idea. His *Castel of Helth* (1539, 1541, etc.) went into at least fifteen editions before 1618.

Line 1. *Tetrasyncrasy:* a mixture of four elements.

2. *Nature from discords produce harmony.* Compare Spenser's "So dischord oft in Musick makes the sweeter lay." (*Faerie Queene,* III, ii, 15, 9) Milton is close to Collop's meaning when he speaks of "Those pure immortal Elements that know No gross, no unharmonious mixture foul." (*Paradise Lost,* XI, 50-53) Compare, too, *On the Elements,* p. 387, 11. 1-2.

3-4. *How wisely th' bloody masse is understood?*
Two Cholers, black and yellow, phlegm and blood.

The humours were thought to be part of the "bloody masse." See Robert Burton's *Anatomy of Melancholy* (1632) I, i, 2, 2: The "foure first primary Humours . . . though they bee comprehended in the Masse of *Blood,* yet they have their severall affections, by which they are distinguished from one another."

5-8. *Phlegm is so crude it scarce bloods nature takes,* etc. The four humours were regularly associated with the four elements, and the notion that the elements changed into one another is at least as old as Plato (*Timaeus,* 49 B): "In the first place, we see that what we just now called water, by condensation, I suppose, becomes stone and earth; and this same element, when melted and dispersed, passes into vapour and air. Air again, when inflamed becomes fire; and again fire, when condensed and extinguished, passes once more into the form of air; and once more air, when collected and condensed, produces cloud and mist; and from these, when still more compressed, comes flowing water, and from water comes earth and stones once more; and thus generation appears to be transmitted from one to the other in a circle." This idea appears again in John Jones' *The*

Bathes of Ayde (1571), table facing folio 23: "Elementum is a simple and most pure bodie, and the best parte, of that wherein it is, can not be deuided into any other kind: and of it all things naturall haue their beginning without al generacion or corruptio. Howbeit of Fire made thicke, commeth Ayre. Or aire made thick commeth water. Of water made thick, cometh Earth. . . ." (quoted in Herford and Simpson's *Jonson*, IX, p. 395.) And Milton makes use of the notion in *Paradise Lost*, V, 415-422. Unlike Plato, Collop does not have the elements progressing in a circle. Phlegm (water) turns to blood (air), blood to yellow choler (fire), choler to black choler (earth), and there the progress ends.

6. *Blood Choler turns, but Choler ne're blood makes.* Compare Biggs (*Vanity*, p. 73): "And according to *Galen*, when the *bloud* begins to putrifie there is made *choler*."

9. *Concoction:* ripening, maturing, bring to a state of perfection.

12. *Perfections sure mopish or mad to be.* Collop, of course, is making fun of this theory of the humours, which would make the end or perfection of nature the production of melancholic humour.

On the Elements.

Lines 1-2. *To answer Humours who four Elements chose,*
Had need the fift, their quarrels to compose.

Compare Plato's *Timaeus*, 32: "Out of such elements which are in number four, the body of the world was created, and it was harmonized by proportion, and therefore has the spirit of friendship; and having been reconciled to itself, it was indissoluble by the hand of any other than the framer." Plato's "proportion" seems to be pretty closely equivalent to Collop's fifth element, Love.

3-4. *Sure it is Love doth all together knit;*
Love made the world, and Love perserveth it.

According to Burton (*Anatomy*, III, i, 1, 2): Love "keeps peace on earth, quietness by sea, mirth in the winds and elements, expells all fear, anger, and rusticity; *Circulus a bono in bonum*, a round circle still from good to good; for love is the beginner and end of all our actions, the efficient and instrumental cause, as our poets in their symbols, impresses, emblems of rings, squares, &c. shadow unto us. . . . Love, saith Leo [note: *Dial.* 3], made the world, and afterwards in redeeming of it, 'God so loved the world, that he gave his only begotten son for it,' *John* iii, 16."

5. *contrary:* i.e. contrary to God's purpose. Compare *Contrariety*, i.e. simply "variety," in l. 8.

Against Phlebotomy to a Leech.

Lines 3-4. *Tell stories of Corruption of the blood;*
What's once corrupt, can it return to good?

A second, legal, meaning is probably suggested here: "When any is attainted of Felony or Treason, then his bloud is said to bee corrupt, by meanes whereof his children, nor any of his Bloud, cannot be heires to him, or to any other Ancestour." (*Termes de la Ley*, 1641, 89) Once blood was declared corrupt there could be no restitution of lands or titles to that family.

5. *To th' habit from privation, how's recesse? Habit* and *privation* are terms of logic: *habit* (the eighth of Aristotle's categories) is the "having" and *privation* the loss or absence of an attribute. See Fraunce, *Lawiers Log.* (1588) I, xi, 49b: "The affirmative is called the habite, the negative the privation thereof." Compare Noah Biggs, *Vanity of the Craft of Physick* (1651), p. 158: "And whether they can hope, the bloud being . . . once putrified in the veins, that from such a privation there can be in nature any regression."

7. *Or opening, can't distinguish good from bad?* Compare Biggs again, p. 140: "Neither to desire *phlebotomy* but rather *purgation*, which may selectively expell the bad, and leave the good. . . . it is the purer bloud, which passing by the center of the heart, obtaineth its own depuration: therefore that which is . . . first let out shall be purer; but the more impure shall be left within."

10. *Take th' price of blood, while life with blood is lost.* Biggs (p. 144), attacking blood-letting, gives the example of Prince Ferdinand, brother to the King of Spain, who was killed by blood-letting in 1641. "His heart, Liver, and Lungs being taken away, and the veins and arteries dissected, such a paucity of blood was found, that a conflux of scarce a spoonful of blood, issued in the cave of his Thorax."

11. *countermining.* Text: "countermiinng." The word means literally "laying countermines"; hence, "counter-plotting" or vaguely "taking counter action."

13. *More merciful Turks thus blood do never spill.* Compare Biggs, p. 143: "the Turks . . . not owning with us the reasons nor use of *phlebotomy*. . . . Under the Ottoman Empire, the greatest part of the *Indies, phlebotomy* is not used, nor so much as heard of; yet the strength of these Nations, their agility, readinesse, vigilancy, and constancy of labour, as well in action as sufferance, you may learn out of the histories."

16. *To take him off we need from graves fetch dust:* The only cure for the blood-letting Leech is a dose of "mummy," a taste of the results of his work.

For Phlebotomy.

Collop, of course, has not changed his mind about phlebotomy. By showing what may be said for the opposition, he buttresses his own position.

Line 9. *'Gainst all Phlebotomy who plead:* Remembering Collop's fondness for displacements of the normal sentence order, I think this should be read: all who plead against phlebotomy.

A Piss-pot Prophet.

Line 4. *Like Mahomet when from th' Dove he Counsel took.* John Cleveland alludes to this same dove in a prose satire on Cromwell: "This Cromwell is never so valorous as when he is making speeches to the Association; which nevertheless he doth somewhat ominously with his neck a-wry, holding up his ear as if he expected Mahomet's pidgeon to come and prompt him." (quoted in Berdan's introduction to *Cleveland's Poems*, 1911, p. 31) But I have been unable to find the source. It is not, I believe, in the *Koran*.

7. Here begins a dialogue in which the doctor does most of the talking and the cowed patient replies occasionally (11. 17-20, 24).

8. *cardialgia:* literally "pains of the heart." Collop's quack, like John Earle's "meere dull Physitian," "tels you your Maladie in Greeke, though it be but a cold or head ach." (*Microcosmographie*, 1628, no. 4)

11. *erratique griefs:* pains that wander from one part to another, like gout or rheumatism.

15. *hydroptick:* dropsical.

15. *Cachectick:* affected with cachexy, or, vaguely, a bad state of the body. The NED quotes R. Copland, *Gaylen's Terap.* (1541) 2, D iij: "The euyll habytude of the body (whiche the Grekes call Cachexie)."

16 *Discracy:* a disordered condition of the body supposed to arise from disproportionate mixture of the humours.

19. *Panchymagogi:* "purgative medicines that expel all corrupt Humours." (Stephen Blancard, *The Physical Dictionary*, London, 1702)

19. *Catholicons.* Blancard: "Catholicum, a common medicine that expels all ill Humours."

20. *Diaphaenicon.* Blancard: "Diaphaenicum, a Composition of Dates."

20. *Electuarie:* a medicinal conserve or paste, consisting of a powder or other ingredient mixed with honey, preserve, or syrup of some kind (NED).

21. *Bezar stone:* a concretion found in the stomach or intestines of some animals, formed of concentric layers of animal matter deposited around some foreign substance; thought to be an antidote, especially against venoms. Compare Noah Biggs, *Vanity*, p. 97: "We dare believe that above the hundred part of these *Bezoar-stones* so called, are *forged* and *sophisticate*. . . . upon sure grounds we know, that there is not much to be trusted to this *stone;* because they do not answer to those effects written of by *Authors*."

25. *Ith' urine man.* Earle's "meere dull Physitian" "will neuer leaue examining your Water till hee haue shakt it into a disease" and he finds all his speculation in a Urinal. (*Micro-cosmographie*, 1628, no. 4)

31. Aarons brestplate was set with the Urim and Thummin (see Exodus 28:15, 30), the stones that are alluded to in Numbers 27:21 as possessing revelatory powers.

33. *the College:* the Royal College of Physicians.

36. *They Bishop-like do place an Image there.* Probably the *image* is the statue of Harvey, erected in 1652 at the new library of the Royal College of Physicians. See *On Doctor Harvey*, p. 393, 1. 1, and note.

37. *Their Idol-Harvy of the Serpents breed.* Possibly this is a pun on Harvey, a variety of apple. The suggestion is that Harvey, like his namesake in the garden of Eden, is being used by the Devil. See *On Doctor Harvey*, p. 393, 11. 19-20. Or perhaps the allusion is to the emblem of all physicians, the serpent of Aesculapius.

38. *To break his head denys the woman seed.* See *Genesis* 3: 15. Harvey's view of the seed was perfectly traditional: "For that *is true seed* according to *Aristotle, which*

takes its Original from two Animals joined in coition; and obtains the virtue or power from both Sexes. . . . So in like manner, the *conception* is the fruit of the *Male,* and *Female* joined in *coition,* and also the *seed* of the future *foetus;* wherefore it differeth not from an *egg.* (*Anatomical Exercitations, concerning generation,* 1653, pp. 392-393)

44. *Distinct from blood he will no spirits own.* See the note to *Of the Blood,* p. 385 11. 9-10.

45-46. *Out of five senses too he would perswade*
He need adde more, your senses are decaid:

Harvey stressed the importance of the senses and close experimental observation in medical studies, though I see no sign that he tried to add to man's five senses. "Our judgement erreth about phantasmes and apparitions comprised in our minds, unless *sense* give a right verdict, established upon frequent observations, and infallible experiments. . . . For since every perfect *Science* builds upon those *Principles,* which it finds out by *Sense;* we must have a special care, that by customary dissections, we be sure those *Principles* are safely grounded. If we do otherwise, we may get a tumid and floating opinion: but never a solid and infallible *knowledge:* As it happeneth to those, who see forraign countries only in Mapps, and the bowels of men falsly described in *Anatomical* tables." (*Anatomicall Exercitations, concerning generation,* Preface, ¶1-2. Possibly the meaning is simply that some claimed Harvey used a "sixth sense" in his anatomical research.

47. The dialogue ends here; the last four lines are Collop's comment on the medical sophistry he has been picturing.

To a Gigger to Padua, Valentia, and Leiden Doctors.

Title: *Gigger:* one who "giggs," i.e. moves to and fro (see *Hamlet* III, i, 150: "You gig and amble, etc.") The poem is addressed, as the content makes clear, to those who think to gain knowledge or reputation by dropping in on the continental medical schools just long enough to get a look at the famous doctors there.

Line 1. *sent:* scent.

5. *Or th' zany knowledge, waits on th' Gyants name?* A *zany* is "a comic performer attending on a clown, acrobat or mountebank, who imitates his master's acts in a ludicrously awkward way." (NED) Compare Jonson's *Everyman Out* (1599) IV, i: "Hee's like a *Zani* to a Tumbler, That tries trickes after him to make men laugh."

6. *impostum'd:* gathered into an impostume or abscess. The fame of these zanies imitating the learned doctors swells into an abscess.

8. *Peripatetiques:* philosophers of the school of Aristotle. The pun is etymological: Greek Peripatētikos, "given to walking about" came to be applied to Aristotle's school from his custom of teaching while walking in the Lyceum.

9-10. *If you are Laden with exotique gold,*
To come near th' Tower of truth you may be bold.

It is proverbial that "an ass laden with gold climbs to the top of the castle." See, for instance, Udall's *Apophthegmes* (1542) f. 166 (translated from Erasmus' Latin): "When he had prefixed and appoynted to take a certain castle and fortresse beeyng veraye strong and well fensed, and his spyes had brought woorde again, to bee a thyng out of peraduentures hard to dooe, yea and (the south to saye) vtterly vnpossible: he demaunded whether it wer of suche hardnesse and dificultee, that it were not possible for an asse beeyng heauie loden with gold to haue accesse and entreaunce or passage vnto it."

14. *Gold need not fear for to endure the test.* That "gold is tried in the fire" is proverbial. For instance, see *Imit. Christ* I, xvii, in *Imit. Christi,* p. 165: "For as golde is proued in the fournes, so man by tribulacion."

15. *Gold's the Suns Child.* This idea, that the action of the sun produces gold, is found also in *Paradise Lost,* III, 606-612:

What wonder then if fields and regions here
Breathe forth Elixir pure, and Rivers run
Potable Gold, when with one virtuous touch
Th' Arch-chemic Sun so far from us remote
Produces with Terrestrial Humour mixt
Here in the dark so many precious things
Of colour glorious and effect so rare?

19. *fucate:* painted, artificially coloured; hence, false, disguised, counterfeit.

20. *These suck'd not milk; but blood from stepdames dugs.* Compare the "blood-sucking Leech" of *Against Phlebotomy,* p. 387, 1. 8.

On Suburban non-Licentiates.

Title: *Licentiates:* those who hold a licence to practice in London (or seven miles around) from the Royal College of Physicians. The adjective often meant "licentious"; Collop is playing on that meaning in 1. 1.

Lines 2-4. *And titles which you paid for are your due,* etc. They apparently could purchase the title of "doctor" though they were not licenced by the College.

8. *The Colledge-fruits are sour like the foxes grapes.* Like Aesop's fox (IV, 1) these quacks pretend to scorn what they cannot reach.

11. *Professors might to th' Colledge pupils be.* Even those who profess expertness in medicine could learn from the members of the Royal College.

12. *you:* you non-licentiates.

12. *want:* i.e., lack.

16. *While death portending Comets blaze and slay.* For the idea that comets presage evil, compare Leonard Digges, *Prognostication Everlastinge* (1576) p. 6: "Cometes signifie corruption of the ayre. They are signes of earthquakes, of warres, of changying of Kyngdomes, great dearthe of corne, yea a common death of man and beast."

On the excellent Dr. Glisson.

Dr. Francis Glisson (1597-1677) took his M.D. at Cambridge in 1634 and the following year was elected fellow of the College of Physicians at London. He became regius professor of physic at Cambridge and one of the original members of the Royal Society.

Line 1. *intend:* strain, stretch.

3. *strengthlesse.* Text: "strenghlesse."

3-4. *Knowledge enervate did and strengthlesse lye,*
Til Glisson use did to the nerves supply.

Collop refers to Glisson's observations on the inherent "irritability" of all the organized tissues of the body.

6. *Knowledge ith' circle, not progresse, complain:* i.e. complain that knowledge or civilization moves by cycles, instead of progressing. This is part of the ancients and moderns controversy, treated fully in R. F. Jones' *Ancients and Moderns* or J. B. Bury's *The Idea of Progress.*

7-8. *Harvy, and Glisson, will force all confesse*
Knowledge by circling, now's in the progresse.

The quarrel is resolved: knowledge progresses by circling (in the theories of Harvey and Glisson).

The Sequestred Priest pidling in Physick.

Compare Noah Biggs, *Vanity,* p. 25: "Some of the *Clergy* also, *Priests* and poor *Scholars,* that have nothing else to do must now turn *Physitians.* Some silenc'd ministers and outed of their benefices, lay hold upon Physick, and commit force and violence to her body, that if one fails, t'other may hold, and think their *Latin,* and their *Coat,* the grand *Charter,* to entitle them to the practise in Physick."

Sequestred: deprived of his living by legal action.

6. *Luke a Physician.* See Colossians 4: 14.

7. *Bard* evidently was the priest's name.

7-8. *it wil the contrary teach,* etc.: I.e. Luke's example will teach physicians to become preachers, not preachers physicians.

The fugitive Chymick.

Line 1. *blow'd:* an error for "blow's"?

2. *Theophrasts:* the reference is to Theophrastus Bombast von Hohenheim (c. 1490-1541), the great German physician and alchemist, known as Paracelsus.

3. *of.* Text: "os."

3. *wit:* an error for "it"? This is the only case of an identical rhyme in Collop, and a line in another of his poems, "Above the salts of Ciceronian wit," makes "it" a plausible reading.

3-6. *He talks of salt,* etc. According to Paracelsus, man is made up of three basic substances, salt, sulphur, and mercury, and each of these had a symbolic significance: salt

represented the material or physical part of man, sulphur the spiritual part, and mercury the soul or "psychic substance." Jolande Jacobi (*Paracelsus, Selected Writings,* pp. 266, 272) reproduces woodcuts from the *Quinta essentia* of Leonhard Thurneysser, a pupil of Paracelsus'. One picturing the spirit (geist) is labelled "spiritus Sulphur"; another showing the soul (seel) carries the title, "Anima Mercury."

5-6. *Nor doth he want his Sulphur,* etc. Sulphur, in addition to being one of Paracelsus' basic elements, was one of the main components of gunpowder.

6. *Powderplot:* the Gunpowder Plot, a conspiracy to blow up the Houses of Parliament on November 5, 1605, while the King and Lords and Commons were assembled there.

7. *Pyrotechny:* a play on two meanings: (1) the use of fire in chemical operations. See J. Harris, *Lex. Tech.* (1704) I: "*Pyrotechnick-Art,* is the Art of Cmymistry, so called because Fire is the chief Instrument the Chymist makes use of in separating . . . the purer Substances of mixt Bodies." And (2) the use of fireworks or gunpowder.

9. *Yet the best things corrupted the worst be.* A proverb from the Latin (*optimi corruptio pessima*) very common in the seventeenth century. Compare Shakespeare's *Sonnet 94:*

For sweetest things turne sowrest by their deedes,
Lillies that fester, smell far worse then weeds.

On sigils.

sigils: occult signs or devices supposed to have mysterious powers; here the astrological signs of the planets.

Line 4. *By monsters, Ague-like they'r frighted sure.* Fright was used as a cure for agues. Aubrey, for instance, relates this story about Dr. William Butler (1535-1618), a Cambridge physician: "The Dr. lyeing at the Savoy in London, next the water side where was a balcony look't into the Thames, a patient came to him that was grievously tormented with an ague. The Dr. orders a boate to be in readinesse under his windowe, and discoursed with the patient (a gent.) in the balcony, when on a signall given, 2 or 3 lusty fellowes came behind the gent. and threw him a matter of 20 feete into the Thames. This surprize absolutely cured him."

5. *If 'tis in matter, in all metalls power.* I.e., if the power of planets is in their matter, it must be shared by those metals that constitute the matter of the planets wherever they are found.

6. *the scorpion may devour.* Scorpio is the eighth sign of the Zodiac.

7-8. *More wisely Theophrast did Magia write*
On's Sigil; and for foolery it endite.

Collop seems to be saying that Paracelsus made fun of sigils, but in fact he put great stock in them. See, for instance, his *Ars signatoria, De probatione magiae, De arte signata,* etc. (Sudhoff and Matthiessen edition, XII, pp. 500-504)

On the Astrologicall quack.

Line 1. *At th' Colledge of the stars he did commence.* Compare Biggs, *Vanity,* pp. 25-26: "There are a generation also who pretend to *Astrology* . . . dare tamper with *Physick,* and by *Schemes, Angles,* and *Configurations* predict not only diseases, but the *Cure* also, and so thinke themselves able *Physitians,* and the rather, because they are now masters of Art, in, and instituted by, the heavenly *Academy,* and *Colledge* of stars."

2. *speak the houses sense.* There is a pun, of course, on the "houses" of the Zodiac.

3-6. *Each house for mans use stranger herbs hath got,* etc. Here again Collop is drawing directly on Biggs, pp. 37-38: "For suppose that sixteen or twenty *starres* make a Constellation, or one of the twelve *Houses,* and is extended thirty degrees: in what manner can so few starres contein the *essences, seeds, faces,* and *properties* of five hundred *plants,* differing in kind and inward *properties.*" For a full discussion of the correspondences between macrocosm, geocosm, and microcosm by which an herb could find its counterpart in the heavens and in man's body, see Marjorie Nicolson's *Breaking of the Circle,* Chap. 1. She quotes Bacon, among others: "The ancient opinion that man was *microcosmus,* an abstract or model of the world, hath been fantastically strained by Paracelsus and the alchemists, as if there were to be found in man's body certain correspondences and parallels, which should have respect to all varieties of things, as stars, plants, minerals, which are extant in the great world." (*Advancement of Learning,* IV, Chap. 2)

8. *refine:* become pure.

9-10. *Or ist since Heav'n stand still, and earth turns round,*
We here are giddy, there no truth is found?

Collop was fond of the "giddy earth" figure. He used it in several of his poems and in his Medici Catholicon (p. 101): "See the . . . Land prov'd as giddy as her inhabitants, since

Copernicism is aprov'd by all." Compare the "harmes and feares" that Donne says (*A Valediction: forbidding mourning*) are brought by "moving of th' earth." For a full treatment of Copernicus' influence on English thought see Francis R. Johnson's *Astronomical Thought in Renaissance England* (1937).

12. *Christs Cross:* An alphabet, from the cross that was drawn at the beginning of the alphabet.

Oglio of quacks.

Oglio: a hotchpotch, a potpourri, from the Spanish or Portuguese dish composed of pieces of meat and fowl, bacon, pumpkins, cabbage, etc.

Line 1. *Medicasters:* quacks, charlatans.

2. *Both are hereditary, Father fool, Son th' knave.* Compare Biggs, p. 26: "Others also assert the medicall art to be *hereditary*, and to run in the line of their *own progeny* although they be all *fools* or *Knaves*."

3-4. *Th' disease that's known, half cured some do say,*
Now not to know't, to cure't's the ready way.

Compare Biggs, p. 11: "I wish I had not occasion to bewaile, when in the concentrations of my mind, I am led to consider the falsity of that saying, not lesse vain and unsuccessful, then common; that when the *Disease* is known, it's halfe way to the cure; so that the other halfe, is left as the alone, and proper worke of *medicines*, but how unable, lamentable experience will testifie."

7. *Nay, ev'n his potion, knowledge can instil:* i.e., his potion can even instill knowledge.

8. *Who's cur'd by chance, a recipe gains to kill.* Compare *On Fontinels*, p. 392, 11. 3-4, and note from Biggs.

9. *The triple tooth'd:* a patient with three teeth?

10. *A sacred number can cure each disease.* Biggs attacks this same sort of magical cure: "Others scribble upon paper, (not the innoxious words of Salomon,) but *Characters*, charms as they call them, whereby *Diseases*, as well as *Devils* are chas'd away." (p. 26)

11. *the Sceleton stole from Surgeons Hall.* Ben Jonson refers to the "Anatomie In Surgeons hall." (*An Ode*, in *Underwood*, XXV, 11. 37-38) Herford and Simpson explain that Surgeons Hall was "in Monkswell Street not far from Cripplegate. The Barber Surgeons' company dissected the bodies of criminals."

13-14. *With Solomons Key, and's Cabal quacks the Jew,*
And th' book whose name sure works Nebolahu.

This apparently comes directly from Biggs (p. 26): "There are they again who pretend to be *baptiz'd Jewes* (more wicked then the not baptiz'd) who have learn'd from the *Kabala* to mortify *mercury* divers wayes. . . . They often cite their *Rabbines*, the book of *Nebolohu*, with the little key of *Salomon*, from whence they can read things past, as well as to come." The *Cabal* (or Kabala) is the Jewish traditional interpretation of the Old Testament, often taken as something mysterious or magical. See Butler's *Hudibras* (1663) I, i, 530: "For Mystick Learning, wondrous able In Magick, Talisman, and Cabal."

16. *Who by pisse prophecying wonders doth impart.* Compare *A Piss-pot Prophet*, p. 388, esp. 11. 23-32.

17. *The words sent th' Syrian King this wretch makes wise. Makes:* i.e. make. The subject is *words*. The reference is to 2 Kings 8: 9-10. Hazael went to Elisha and said "Benhadad king of Syria hath sent me to thee, saying, Shall I recover of this disease? And Elisha said unto him, Go, say unto him, Thou mayest certainly recover: howbeit the Lord hath shewed me that he shall surely die."

18. *Another those were spoke in Paradise.* Possibly some quacks dealing in herbal remedies went for authority to Genesis 1: 29: "And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat."

19. *But oh see Locusts from the infernal pit.* A reference to the plague of locusts called up by Moses on the land of Egypt (Exodus 10: 12-15).

22. *since reason man betrai'd:* i.e. since man betrayed reason.

23. *Physitians once were Children of the Sun.* Apollo, the sun god, was the patron of learning in general and of medicine in particular.

25. *Wise Lacedemon would no quacks endure.* A similar story appears in Montaigne (*Essays*, II, xxxvii): "on demandoit à un Lacedemonien qui l'avoit fait vivre sain si long temps: L'ignorance de la medecine, respondit il."

26. *Themselves intitling unto natures cure.* Compare Biggs, p. 146: ". . . and so not worth thanks to the Physitian, seeing they may be cured by the spontaneous and merciful

goodnesse of nature." Or Van Helmont, *Deliramenta Catarrhi* (1650), p. 3: "*Nature* herselfe is the sole *Aesculapius* of diseases: and the *Physician* no more but her *Adjutant;* according to that worthy Maxime of Hippocrates."

29-32. *While Italy did to Adrian complain,* etc. Italy did complain bitterly to Adrian IV, Pope 1154-1159, against the German invaders led by Frederick Barbarossa whom Adrian had called in to help against Arnold of Brescia and other rebels. I can find no record of this particular reply to complaints.

On Noah Big's vanity of the Craft of Physick.

The full title of Biggs' book is: *Mataeotechnia Medicinae Praxews:* the Vanity of the Craft of Physick; or, a new DISPENSATORY wherein is dissected the *errors, ignorance, impostures,* and *supinities* of the SCHOOLS, in their main Pillars of *Purges, Blood-letting, Fontanels* or *Issues,* and *Diet,* etc. With an humble Motion for the Reformation of the UNIVERSITIES and the whole Landscap of PHYSICK, and discovering the terra incognita of CHYMISTRIE, to the parliament of ENGLAND. London. 1651.

Line 2. *Since for one truth preserv'd he twenty wav'd.* As the title makes clear, Biggs' book was sweeping in its condemnation of conventional medicine, proposing to reform "the whole landscap of Physick." From the point of view of modern medicine, I suspect the book would stand up rather well. Though Collop is severe in his criticism of Biggs here, he draws on him extensively in all these medical poems, as the notes indicate.

3. *While you would physick purge, and purges too.* Biggs has a long and vivid section on the evils of purges, p. 70 ff.

4. *a purge of hellebore:* "Black hellebore, that most renowned plant, and famous purger of melancholy, which all antiquity so much used and admired, was first found out by Melanpodius a shepherd, as Pliny records, *lib.* 25, *cap.* 5. . . . Galen, Pliny, Caelius Aurelianus etc. . . . extol and admire this excellent plant; and it was generally so much esteemed of the ancients for this disease amongst the rest, that they sent all such as were crazed, or that doted, to the Anticyrae, or to Phocis in Achaia, to be purged, where this plant was in abundance to be had. In Strabo's time it was an ordinary voyage: *Naviget Anticyras;* a common proverb among the Greeks and Latins, to bid a dizzard or a madman go take hellebore." (Burton, *Anatomy, II,* 4, 2, 2)

9. *Yet while he's gleaning up Van Helmonts scraps.* Compare *On Van Helmont,* p. and notes. Van Helmont's *Deliramenta Catarrhi* (tr. 1650) anticipated Biggs attack on many of the practices of the schools: Purges, fontanels, cauteries, elaborate diets, phlebotomy, various concocted remedies, and the tendency to trace all infirmities to excessive heat or cold. Biggs acknowledges Doctor Browne, Jacobus Primrosius, and Van Helmont as his precursors (p. 31).

10. *the Dutch hogs head:* Van Helmont?

11-14. *Had he apprentise to an Alewife been,* etc. Van Helmont in his *Oriatrick* (tr. 1662), p. 111, makes much of ferments: "As no knowledge in the Schooles is scantier than the knowledge of a Ferment, so no knowledge is more profitable." And he goes on to follow very closely the course of fermentation that takes place in the brewing of beer or ale. He considered digestion, nutrition, and movement to be due to ferments, which, in six stages, convert dead food into living flesh. Also in his *Nativity of Tartar in Wine* (tr. 1650) Van Helmont discusses at some length the chemistry of Wine, fermentation, etc. Biggs, too discussed ferments, though at less length than Van Helmont. Food, he said, "is leavened, transmuted and subdued by the mediation of the *Locall* and appropriate *Ferments.*" (p. 207)

16. *Knowledg in Physiques occult quality:* knowledge in physic is an occult quality. The meaning is that knowledge of medicine is nowhere in evidence (with a play on *occult*).

On Noah Biggs.

Line 1. *By the spirit more though Chymistry can show.* I.e., though chemistry can show more by the spirit. Though Biggs has very little to say of "spirits," they do play an important part in Van Helmont's medicine. For instance, in *Deliramenta Catarrhi* (p. 4) he writes: "even from the first moment of the conception of an Embrion, there is assigned to every peculiar member one *Implantate* or *Originary Spirit,* as immediate president and Governour thereof, and another *Influent* Spirit, deradiant from the heart, as the *excicator* and assistant of the former."

3-4. *Though ages dream'd, and th' aged dreamers be,* etc. See Joel 2: 28.

5. *Harves:* harvest?

6. *Themselves in him the Colledge pillars rear.* Compare *On Doctor Harvey,* p 393, 11. 1-2, and note.

On Fontinels.

A *Fontinel* was an artificial ulcer or issue kept open with the theory that malignant vapours or humours would be drawn from all over the body and expelled there. This supposed flow of humours to a particular spot in the body is a *defluxion*. Both Van Helmont and Biggs attack the whole theory of defluxions and fontinels very vigorously. This is the primary target of Van Helmont's *Deliramenta Catarrhi: or, the Incongruities, Impossibilities, and Absurdities Couched under the Vulgar Opinion of Defluxions*, in which he says: "No theory of the Schools was ever more full of *negligence, absurdity*, and *danger*, then this of Defluxions." Biggs is equally vehement (p. 176): "We have considered the childish presumption of Physitians, in that they so seriously perswade themselves, they can engage nature . . . to follow their commands, and expell the catarrh or defluxion at the hole that they have made in the flesh. That *fictum impossibile* of catarrhs, hath been a very convenient mother indeed to bring forth the production of *Fontanells:* which *Theory* being denyed, the ground of *Fontanells* is a vain thing." Biggs spends twenty pages showing that fontanels are vicious and attempting to prove that the pus that flows from a wound is formed at the wound by the wound itself.

Lines 3-4. *He that doth good, though he the cause don't know*
There is no cause why he should lesse it do.

Collop is facetious in this statement justifying ignorant practices, for see his *Oglio of quacks*, p. 391, l. 8: "Who's cur'd by chance, a recipe gains to kill." And here in ll. 7-8 he insists on the importance of seeing all of the truth, not just peeping in at it. Compare Biggs, p. 188: "If the adored Fontanel hath proved to hit sometimes, and profit some . . . the schools may confesse that Fontanels help by means and ends, to them unknown: and that they extol with so great encomiums only a conjectural, uncertain and accidentall remedy. . . . For what if any one distemper of its own accord, or in processe and maturity of time should moulder away; what therefore do they think it equitable, . . . lamentably to torture two hundred in vain, if a Fontanel to one hath not by Accident been dismall and unfortunate?"

5. *roweld:* spurred.

6. *Farrier:* a shoeing-smith, hence one who treats the diseases of horses.

5-6. *Corruption from a roweld horse doth flow:*
'Cause th' Farrier knows not, why is it so?

The couplet is a statement, not a question: Corruption continues to flow from a roweled horse because the Farrier does not know the cause of it.

7-8. *Who truth immers'd, would pluck out of the pit,*
Not onely peeps, but doth exantlate it.

Compare Sir T. Browne, *Pseudodoxia*, I, v, (Works II, p. 40): "For questionless, in Knowledge there is no slender difficulty; and Truth, which wise men say doth lye in a Well, is not recoverable but by exantlation." The *Oxford Dictionary of English Proverbs* quotes Diogenes Laertius: "We know nothing certain; for truth is hidden in the bottom of a well."

9. *the first moving vesicle:* the heart.

9. *tracts:* tracks or traces.

9-10. "Who" is to be understood at the beginning of l. 9: Who tracks the blood to the first moving vesicle hath understood, etc. Lines 9-12 clearly refer to William Harvey.

12. *Not fights 'bout words, but can the things define.* The last sentence in Harvey's preface to his *Anatomical Exercitations, concerning generation* is this: "And here, me thinks, I hear *Galen* advising; *If we consent in the things, contend not about the words.*"

17. *he:* Noah Biggs. See notes to ll. 1-4 above.

19. *Patavie:* Padua. This sentence from Biggs (p. 190) explains the allusion: "So also they of *Patavie, Hetruria,* & *Montpelier* do drive a hot iron unto the very suture of the *Cranium* in the *epilepsy*, without hope of cure, and do promise that the *epileptick* fumes shall come that way out of the brain."

On Van Helmont.

This is Jean Baptiste van Helmont (1577-1644), the famous chemist, physiologist, and visionary. Collop surely knew his *Deliramenta Catarrhi* (tr. 1650) and his *Ternary of Paradoxes* (tr. 1650), and he was probably familiar with his *Oriatrike*, though it was not translated into English until 1662.

Line 4. *By fruits of knowledge we may blinded be.* This is a reversal of the situation of Adam and Eve in Eden where after they had eaten the fruit of the tree of knowledge, "the eyes of them both were opened." (Gnesis 3: 5-7)

7. *writ.* Text: "wilt."

8. *Superfaetation:* a second conception occurring after a prior one and before delivery. Collop is referring to Van Helmont's two offspring, *Deliramenta Catarrhi* and *A Ternary of Paradoxes* both delivered in English in 1650. He no doubt borrowed the figure from Donne's *Letters* (1651), p. 74: "This *Tuesday* morning, which hath brought me to *London,* presents me with all your Letters. . . . For that which is denied in other generations is done in this of yours: for here is superfetation, childe upon childe, and that which is more strange, twins at a latter conception."

9. *'Bove Galens scurf.* Biggs, too, speaks of the "old *scurff* of *Galen* and his accomplices, benighted to the clouds of *ignorance.*" (pp. 18-19)

9-10. *him whose scraps might feed Sages:* Aristotle?

12. *If not much labour, Theophrast shew'd much oyl.* Theophrastus (i.e. Paracelsus) appears here because Van Helmont did in some measure model his researches on those of Theophrastus. *Oyl* is of course used punningly. Paracelsus' *Secrets of Physick and Philosophy* (tr. 1633) proposed to show "the true and perfect order to distill, or draw forth the Oyles of all manner of Gummes, Spices, Seedes, Roots, and Hearbs, with their perfect taste, smell and vertues," and the chapters are entitled "To make Oyle of Masticke," "To make Oyle of Mirra," "To make Oyle of Storax liquida," etc.

14. *inlarges:* sets free.

On Doctor Harvey.

Compare Collop's accounts of Harvey in *A Piss-pot Prophet,* p. 388, 11. 35-46, and *On Fontinels,* p. 392, 11. 7-12.

Line 1. *What can one pillar onely be thy due.* In 1651 Harvey offered to build, annonymously, a library for the College of Physicians. This was done, but the donor became known, and on 22 December 1652, the college voted the erection of Harvey's statue (the "pillar" of Collop's poem). On 2 February 1654 the library was complete and Harvey presented it to the college.

3. *Had we Seth's pillar whose sight Joseph feigns.* Josephus in his *Antiquities,* I, ii, says that Seth and his children "made two pillars; the one of brick, the other of stone; they inscribed their discoveries on them both, that in case the pillar of brick should be destroyed by the flood, the pillar of stone might remain, and exhibit those discoveries to mankind."

5. *Non datur ultra Hercules pillars show.* Hercules pillars are the rocks Calpé and Abyla on either side of the Strait of Gibraltar, thought by the ancients to be the western boundary of the world, hence an ultimate limit, the *non datur ultra.*

7. *Seav'n headed Hydra, error multiply'd.* The fabulous many-headed snake, often used as a symbol for error, was said finally to have been killed by Hercules.

9-10. *Augean filths no work when try'd with thee,* etc. Cleaning the Augean stables was one of the twelve labours imposed on Hercules by Hera.

11. *heat-drops:* a few drops of rain ushering in a hot day.

15. *Thou circlest through our Microcosm.* Compare *Man a Microcosm,* p. 385, and *Of the Blood,* p. 385.

18. *And the Serpent now would cheat us with his dust.* The apple, fruit of the tree of knowledge in Eden with which the Serpent tempted Eve, was often identified with the apple of Sodom which turned to dust or ashes when it was touched. See, for instance, *Paradise Lost,* X, 560-570.

20. *an Harvey:* a variety of apple. Compare *A Piss-pot Prophet,* p. 388, 1. 37, and note.

21. *Yet here we knowledge gain without a death.* Unlike the forbidden apple in Eden, Harvey gives knowledge without death.

22. *Death onely opens us a way to breath.* The meaning probably is that by the dissection of dead bodies Harvey is learning how to prevent deaths.

24. *He Cherubin like doth guard the tree of life.* See Genesis 3: 24.

27. *a Peckquet, Bartholine.* The text has a comma after *a. Peckquet:* Jean Pecquet (1622-1674) was a French anatomist, who gained a European reputation by the discovery of the thoracic duct and the reservoir of chyle. He wrote *On the Circulation of the Blood and Motion of the Chyle* (1651) and *De Thoracis Lacteis* (1651). *Bartholine:* Thomas Bartholin (1616-1680) was an eminent physician who did a treatise on the lymphatic vessels, a dissertation on the functions of the liver, and an *Anatomia* (1641). In his *Medici Catholicon,* pp. 100-101, Collop speaks of "lacteall veins found out by *Asellius,* inlarg'd by *Pecquet* in dogs, by *Bartholine* in men, and the knowledge of them arrived to the Zenith in the elaborate pieces of that great Master of generation and circulation, Doctor *Harvey.*"

31-32. *Art natures midwife, stripst her Callow brood*
And new attirest to inrich our blood.
The subject is "you," Harvey; you let us see nature's productions in a new light, in new apparell.

35. *To issue wanting Absaloms Pillars rear.* "Now Absalom in his lifetime had taken and reared up for himself a pillar, which is in the king's dale: for he said, I have no son to keep my name in remembrance: and he called the pillar after his own name: and it is called unto this day, Absalom's place." (2 Samuel 18: 18)

36. *Each generation will give him an heir.* Apparently some had lamented Harvey's lack of an heir, but Martin Lluellen in his dedicatory poem to Harvey's *Anatomical Exercitations, concerning generation* (1653) writes:

Live *Modern Wonder,* and be read alone,
The *Brain* hath *Issue,* though thy *Loins* have none.
Let fraile *Succession* be the Vulgar care;
Great *Generation's* selfe is now *thy Heire.*

On Dr. George Ent.

Sir George Ent (1604-1689) graduated M.D. at Cambridge in 1631 and in 1639 became a fellow of the College of Physicians after studying for five years at Padua.

Lines 1-2. *Perfum'd with spices, when our Phoenix dies,*
May'st from his ashes glorious arise.
Our Phoenix is Harvey (see 1. 17 below). Both Pliny (X, 2) and the *Physiologus* tell the story of the Phoenix, which is recounted in all its essential details by Maplet (*A Greene Forest,* 1567, 1930 edition, p. 165): "Phaenix is a bird of Arabie, of marueilous long life, she liueth aboue six hundereth and sixtie yeares, and at the last being werie of hir life, goeth to the groaues there, and gathereth small slippes and twigs of such kinde of trees as be both extreme whot and odoriferous withal as is Cinomon and such like: and so bestreweth hir nest, commonly made in the highest firee trees, and next to the Sunne: and flying thither lieth voluntarily in hir nest abiding both the burning of the spice and Sunne, and therewith is consumed to ashes. And of those ashes animated by the Sunne, and other Planets, ariseth another Phenix, which maintaineth and continueth the kind from time to time." The Phoenix appears very frequently in seventeenth century literature. See, for instance, *Samson Agonistes,* 11. 1697-1707.

4. *Non ents in knowledge, may thy skill impart.* Probably the meaning is that those who have not his knowledge may pass on the skills he develops.

6. *Yet bearded Meteors all their lights from shine:* i.e., all their lights shine from bearded meteors. This is probably a reference to the astrological medicine still practised then. Compare *On Sigils* and *On the Astrologicall quack,* p. 391.

15. *them:* the drops of blood? If not, the referent must be vaguely "men."

17. *Great Harvy's second.* The friendship between Harvey and Ent is commemorated by Dryden in his *Epistle to Dr. Charleton.* Ent defended Harvey's doctrine of circulation in a tract entitled *Apologia pro circuitione sanguinis* (1641) directed particularly against Aemylius Parisanus, a Venetian physician who had attacked Harvey's theory. Also, he arranged for the publication of Harvey's last treatise, *De Generatione Animalium* to which he added a preface of his own.

18. *her Midwife:* Harvey. See *On Doctor Harvey,* p. 393, 1. 31.

20. *Can onely open veins to make truth bleed.* The sense requires that we understand a "who" at the beginning of this line.

23. *th' whore,* of course, is Helen, and figuratively ignorance or prejudice.

24. *Till prejudice is Captive led by sense.* Martin Lluellen uses this phrase in his description of Harvey's battle with his challengers:

From *Forreign coasts,* and to the *conflict* come,
Some thy bold *Challengers,* thy *Seconds* some.
But when *Experience* vanquisht their *defence,*
And *Prejudice* was captive led by *Sense:*
The *Ingenuous* laid down Arms, and fled to You,
As their *Instructor,* and their *Victor* too.

(Dedicatory Poem to Harvey's *Anatomical Exercitation, concerning generation*)

On Doctor Brown.

Sir Thomas Browne (1605-1682) probably wrote his *Religio Medici* in 1635 or so, though it was not published until 1642 (authorized edition, 1643). His *Pseudodoxica* or *Vulgar Errors* appeared in 1646.

Lines 1-2. *Religio Medici though th' world Atheism call,*
The world shows none, and the Physitian all.
Though the religion of a physician is generally taken to be atheism, the world shows no religion and the physician (Browne) all. The text has "word" for *world* in 1. 1 and "would" for *world* in 1. 2.

5. *What Paracelsus brag'd of doth disclose.* See *Pseudodoxia* III, 12: "More veniable is a dependence upon the Philosopher's stone, potable gold, or any of those Arcana's whereby Paracelsus that died himself at forty seven, gloried that he could make other men immortal."

8. *Sanedrim:* the supreme council at Jerusalem; hence, the Assembly of Divines that set Presbyterian dogma.

9. *Scotch pedant:* a reference to Alexander Ross (1590-1654), the Scotch clergyman and miscellaneous writer who attacked Browne along with Harvey, Bacon, Digby, Hobbes, and others. His replies to Browne appear in *Medicus Medicatus: or the physician's religion cured* (1645) and *Arcana Microcosmi; or, The hid Secrets of Man's Body disclosed . . . With a Refutation of Doctor Browns Vulgar Errors, And the Ancient Opinions Vindicated* (1651).

11. *concocted:* formed.

15. *Dog-like to vomits run.* See Proverbs 26: 11 or 2 Peter 2: 22. Biggs gives the proverb the same application as Collop: "They . . . set down to a precise Conformity, to lap up the prodigious vomits of *Aristotle, Galen* and other *illiterate* Ethnicks." (*Vanity*, p. 19)

17. *While these can prize truths weapons by the rust.* This line is borrowed, with variations, from Martin Lluellen:
Who for their *Age* alone doe Writers trust,
Prize *Armour,* not for th' Proof, but for the Rust.
(Dedicatory poem to Harvey's *Anatomical Exercitations, concerning generation*)

18. *Crawl with the aged serpent in the dust.* The serpent's curse was that he go upon his belly and eat dust. (Genesis 3:14)

On Dr. George Bowle of Oundle.

Munk, in his *Roll of the Royal College of Physicians,* dispatches Bowle in one sentence: "George Bowle, M.D., a doctor of medicine of Leyden of 26th September, 1640, was admitted an Honorary Fellow of the College in December, 1664."

Lines 1-4. *Nor shalt thou dearest Bowle oblivion take,* etc. Apollo, god of learning or poetry and of the sun, will surely give enduring fame to Bowle, who makes his physician's rounds as faithfully as the sun.

7. *trepane:* operate on with a trepane, a surgical instrument in the form of a crown-saw, for cutting out small pieces of bone.

9. *No dialect of nodds.* Compare *Richard III,* I, iii, 49: "Because I cannot . . . Ducke with French nods, and Apish curtesie." *Noddy:* simpleton, fool.

10. *While th' hogshead fears a vent,* etc. Compare *On Noah Big's vanity,* p. 392, 1. 10, where the brain is again a hogshead.

12. *plush:* a kind of cloth having a nap longer and softer than that of velvet, sometimes taken as the typical livery of the "fool" or clown.

13. *Who'd not have's brain be trepaned by thee:* a question; i.e. who would not open his thoughts to you?

16. *While Artists discords in the best musique ends.* Compare *On the Humours,* p. 386, 1. 2, and note.

17. *Thou Paracelsus makest Galens friend.* According to tradition, Paracelsus, before his lectures in medicine at the University of Basel, solemnly burned the works of Galen and Avicenna.

21. *neither:* Text: "neitheir."

24. *We owe the virtues:* i.e. to thee we owe the virtues.

On the death of his inviscerately affected friend, etc.

Richard Watson: Richard Wateson is among the surgeons named by R. R. James in his "List of Surgeons in Practice in London and its Suburbs in 1641." (*Bull. Hist. Med.,* 1946, *19,* 287.) He was master of the guild in 1630.

Line 1. *sympathy.* Compare Lyly's *Euphues,* Croll and Clemons ed., p. 26: "Hereof cometh such great familiarity between the ripest wits when they shall see the disposition the one of the other, the *sympathia* of affections, and as it were but a pair of shears to go

between their natures." (Croll and Clemons note: That is, they were cut out of the same cloth) The word had a technical, magical meaning in addition to the ordinary one: "It sufficeth not, that the *Spirit* of one individual maintain and observe this law of *concord* and *monomachy* or *duello* with the *Spirit* of another individual: but moreover there dwells a certain *universal or mundan spirit* in the whole world, (i.e.) in all things within *Trismegistus Circle*, which we Christen the *Magnum magnale*, which existeth the universal *Pander* of all *sympathy* and *dyspathy* . . . but it is only the *universal spirit*, the *Common Mercury*, inhabiting the middle of the universe . . . transports, promotes, and causes the *Sympathy*. (Van Helmont, *Of the Magnetick Cure of Wounds* (1650) pp. 79-89. Or see *Paradise Lost*, X, 245-249:

> whatever draws me on,
> Or sympathy, or some connatural force
> Powerful at greatest distance to unite
> With secret amity things of like kind
> By secretest conveyance.

5. *inviscerate:* deeply fixed in the "bowels" or heart.

12. The comma is misleading: who dying makes his friend a corpse or skeleton.

14. *And of his art will me a monument make:* i.e., will make me a monument to his art.

16. *How can he dye who writes but Watsons name.* A modest reversal of the usual poet's boast.

The Royal College of Physicians of London and Some City Livery Companies

O. M. LLOYD*

TODAY the name of the Royal College of Physicians of London is somewhat misleading, for it exercises its powers and responsibilities not only in London but throughout the whole of England. When it was originally founded, however, in 1518, its sphere of influence was limited to the City of London and the area within seven miles thereof, and although it was not long before it acquired a certain amount of control over the practice of medicine in the rest of the country, its activities continued to be mainly concerned with London. In fact, it had itself some of the characteristics of the City Livery Companies, for like them it constituted a kind of craft guild, founded to protect the interests of its profession, to regulate the training and licensing of those who wished to follow it, and in general to supervise the practice of medicine within the seven-mile boundary.

During its long history the College has been in various ways associated with some of the City Companies and an examination of how and when their respective functions and interests have overlapped throws some interesting sidelights on the history of medicine and its practitioners in London.

Society of Apothecaries

As is to be expected, the Company with which the College has had the longest and closest connection is the Society of Apothecaries, a connection which began with the very founding of the Society.

When the Grocers' Company received a charter in 1606, the apothecaries were incorporated with it, but such was the Company's incompetence in managing the affairs of apothecaries that a separate Society was founded only eleven years later. In its charter of 1617 the King stated that he was moved to grant it "by the entreaties of our beloved and faithful physicians, Theodore de Mayerne and Henry Atkins." The latter being then President of the College and the former a prominent Fellow and a royal physician, they had

* Royal College of Physicians, London, England.

represented to the King that "of these last years many Empericks, and ignorant and unlearned men inhabit . . . London . . . who, not being brought up in the art and mystery of an Apothecary . . . do make many unwholesome, hurtful, false, corrupt, and pernicious Medicines," and had convinced him of the necessity of a separately organized corporation of apothecaries.[11]

In spite, however, of such an auspicious beginning to the relations between the Society and the College, their joint history during the seventeenth, eighteenth, and nineteenth centuries is one of a long series of disputes, and much printer's ink ran in the course of their heated exchanges. An apothecary's activities were by law originally restricted to the compounding of medicines under the direction of licensed physicians, but many exceeded their powers and prescribed and administered drugs on their own authority. The *Annals* of the College during the seventeenth century record many cases of apothecaries who had so transgressed and been arraigned before Comitia of the College by the survivors of their more unfortunate patients. There is no doubt that much good work was done by some apothecaries and other unlicensed practitioners, particularly among the poorer classes who could not afford the high fees of the physicians, but at the same time quackery abounded, and the College was tireless in its denouncements of the dangerous proceedings of empirics.

Dr. Christopher Merrett, who was a friend of William Harvey and on his nomination first keeper of the library and museum which Harvey had presented to the College, was one of several eminent physicians of the time who joined in the paper warfare. His *Short View of the Frauds and Abuses Committed by Apothecaries,*[7] published in 1669, lists their offenses under three heads: those relating to medicines, to patients, and to physicians. He accuses them, firstly, of falsifying "the grand Compositions" of the *London Dispensatory*; secondly, of causing harm to patients and their purses by overdosing and overcharging and by calling in unworthy physicians with whom they worked hand-in-glove; thirdly, of slandering the College in their efforts to usurp the practice of physicians and even extirpate them altogether.

At about the turn of the century, however, two events combined, in very different ways, to bring about a comparatively amicable relationship between the two bodies. In 1688 the College inaugurated a scheme whereby its Fellows and Licentiates gave free advice to the sick poor and prescribed medicines which were made

up for little above cost price at the College's own laboratory in a dispensary specially set up for the purpose.[9] This scheme naturally interfered with the business of apothecaries and they made a great outcry against it, supported by a few renegade physicians. The ensuing dispute, once again attended by controversial literature, was satirized by Sir Samuel Garth in his famous mock-heroic poem, *The Dispensary,* first published in 1699.[4] The quarrel is depicted as a Homeric battle, with Greek names but thinly disguising the identities of prominent physicians and apothecaries. The poem reached its tenth edition in 1741 and by ridiculing the strife which had often been prosecuted with such bitterness probably did as much as any other single factor to bring it to an end.

The second event occurred a few years after the appearance of *The Dispensary,* when a judgment was given in the House of Lords which established a new status for apothecaries. One of their number, William Rose, had been prosecuted by the College in 1702 for illegal practice[8] and, when the judge's decision was given against him, had appealed to the Lords and succeeded in obtaining a reversal of the verdict. It was thereby laid down that apothecaries might, in addition to compounding medicines, prescribe them and give advice.

It is relevant here to quote from a manuscript account of a meeting in 1711 between the Censors of the College and four representatives of the Society convened to decide on a substitute for prunes, of which there was then a shortage, in the compounding of a drug, *electuarium lenitivum.* At the end of the meeting "the President and Censors laid by their gowns and caps and entertained the apothecaries with a handsome cold meal and wine. . . . And it was hoped that this civil treatment would induce the apothecaries to be better friends to the Physicians of the College than they had been for some years past."

By an Act which had been passed in 1540 the College was authorized "to survey and examine the stocks of apothecaries, druggists, distillers and sellers of waters and oils, and preparers of chemical medicines," and see that their drugs conformed to certain standards—standards which were later, of course, laid down by the College's own *Pharmacopoeia Londinensis,* first published in 1618. The "visitations" of the shops were carried out by the four College Censors in company, after the founding of the Society of Apothecaries, with the Wardens of that body. The College is in possession of manuscript records of these inspections complete for the years

1724-1856. In them are given details of the shops visited and comments on their wares; for the most part the Censors' remarks are favorable, but criticisms such as "Bark very bad; rhubarb none," or even "No body at home to shew medicines. Most of the bottles seemed empty," are sometimes met with. The Apothecaries resented what they felt to be an unwarranted interference with their business, and when an Act was passed in 1722 strengthening the Physicians' authority to carry out inspections, they published *Reasons against continuing of the Act*,[12] but even this public airing of their grievance was of no avail and the College continued to exercise its powers.

A strong link between the Society and the College has always been the Chelsea Physic Garden. The Garden was first established by the Apothecaries in 1673, but they were frequently in financial difficulties over its upkeep and in 1722 the landlord, Sir Hans Sloane, President of the College and also of the Royal Society, virtually gave it to them, conveying the freehold to them for £5 per annum. (The indenture, bearing his signature and seal and a very well-preserved seal of the Society, is in the College library). In the following year he further aided them with a gift of £100 and persuaded the College to vote a similar sum. In gratitude the Society commissioned from Rysbrack a marble statue of Sloane in his presidential robes and erected it in the Garden, where it stands to this day. Financial problems continued to beset the Society, however, throughout the eighteenth and nineteenth centuries, until finally it relinquished its trust in 1893 to the Charity Commissioners. The Garden is now administered by a committee of representatives of interested bodies, including the Society and the College.

Company of Distillers

Twenty-one years after the Society of Apothecaries gained its charter Sir Theodore Turquet de Mayerne was concerned with the founding of another Company, that of the Distillers. With this he was even more closely connected, for it was chiefly under his influence that the Company was formed and obtained its incorporation.

The craft of distilling had been entirely unregulated in the Middle Ages, for as ale-drinkers the English did not practise spirit distillation to any extent. In the reign of Henry VIII, however, the craft was introduced through Irish enterprise and by the time of Charles I was a flourishing business. Mayerne, in company with

Sir William Brouncker, a court official, and Sir Thomas Cademan, another Fellow of the College and physician to Henrietta Maria, obtained a charter for the Distillers in 1638. He was made "perpetual principal assistant" of the Company, and Cademan its first Master. In 1639 was published what was probably the joint work of the two Fellows, *The Distiller of London, set forth . . . for the sole use of the Company of Distillers of London and by them to bee duly observed and practized,* described in the preface as "a book of rules and directions concerning distillation of strong waters and making vinegars."[6] A simplified edition, "in words at length and not in mysterious characters and figures," was published in 1652 by John French, an army doctor, under the title of *The London Distiller.*[3] In Mayerne's manuscript volume of prescriptions in the College's collection of manuscripts are extracts transcribed from *The Distiller,* including one giving instructions for making "vinegar, beeregar and alegar."

Naturally the activities of the Distillers encroached on the province of the Apothecaries, as far as distilled waters and spirits for medicines were concerned, so it is not surprising to find that the Society issued a protest in a *Briefe of the Apothecaries' cause against the Colledge of Physitians and new patent of distillers.*[10] They complained that because members of the Distillers' Company were allowed to make and sell distilled waters "a great part of the Apothecaries' art and trade is taken from them, and divers of them are likely to be undone thereby, and great danger and inconvenience may happen to the people by the said Patent, and by the undue making the Waters by such ignorant persons." But the new Company held its own, though it was not in fact enfranchised until 1658 or granted livery until 1672. It still exists today and although, like most of the City Companies, it has long ceased to exercise its craft functions, it still restricts its membership to persons connected with the trade.

COMPANY OF STATIONERS

The College has not had any direct contact with the Stationers' Company as a body, but in its capacity at various times as licenser and publisher of medical books it has assumed some of the functions of that Company.

Under the Stationers' charter of 1557 no one who was not a member of the Company was allowed to print any work for sale; moreover, every member was obliged to enter all the books he

printed in the Company's *Registers,* except any which under a special patent he could regard as his own property. Accordingly, when the College wished to have printed its first *Pharmacopoeia Londinensis* it commissioned a member of the Company, John Marriott, for the task, and he was granted a patent by James I exempting him from the above-mentioned obligation. He brought out the *Pharmacopoeia* in May, 1618, but almost immediately the College suppressed it, withdrawing all the copies it could get hold of, and published an amended edition in December of the same year. The College laid the blame for the first version on Marriott, saying that he had printed it without the permission of the President, but it seems possible that this was no more than an alibi, and that the truth of the matter was that the first issue had met with such an adverse reception that an improved edition had to be produced forthwith.

Soon after Elizabeth I came to the throne a system of censorship was introduced in the form of a declaration that no book should be published unless it were first licensed by a certain authority appropriate to its subject. This edict was enforced with varying stringency during the next century or so, but again in 1643 an order was made by the Lords and Commons listing all such authorities, among which, for "Physick and Surgery books," was the College, in the persons of "the President and four Sensoires" (the Censors not being officials appointed especially for this purpose, but officers of the College instituted by the original charter for the examination of candidates and for other duties). This explains the appearance of the College's *imprimatur* in medical books of the time.

In connection with this licensing power of the College, a passage in its *Annals* for 28 March 1635 is worthy of notice. "It was ordered by the College in regard of some inconvenience which had happened in printing of books, that no Fellow, Candidate or Licentiate shall presume to sett his hand to the approbacion of any physick or surgery book or to any booke which concerneth any part of physick unlesse the said booke be first approved by the President and Censors, nor write any Epistle or Verses to any booke not so licensed, and that the President shall not approve any such booke without the consent of the 4 Censors."

This form of censorship by the College is exemplified in the case of a Licentiate, Helkiah Crooke. His work on human anatomy, Μικροκοσμογραφια,[2] came before the College for discussion on 3 April

1615. The President, Dr. Thomas Moundeford, declared that if it were published with Part IV, on the generative organs, in the form then submitted, he would burn every copy he could find. Two of the Censors undertook to read through the offending passages and make any alterations they thought necessary, but in any event the whole work was published as written and even reached two subsequent issues, in 1618 and 1631.

COMPANY OF GROCERS

A famous Master of the Grocers' Company, Sir John Cutler, was a great benefactor of the College soon after it moved into its third City home in Warwick Lane after the destruction in the Great Fire in 1666 of the previous "College House" at Amen Corner. Cutler was notorious for his avarice, but this reputation does not seem to have been wholly deserved, for not only was he generous to his own Company, but he undertook in 1674 to have erected at his own expense an anatomical theatre for the College of Physicians. The theatre was built after a design by Sir Christopher Wren and was opened officially on 21 January 1678/9. The first lectures delivered in it, on the same day, were Walter Charleton's *Enquiries into Human Nature*,[1] published in the following year with a dedication to Cutler expressing "grateful sentiments of your exemplary munificence" in providing "the fittest means to bring . . . the noblest of all arts, the art of healing, to perfection." A statue of Cutler was set up on the outside of the theatre above an inscription reading "Omnis Cutleri cedat labor amphitheatro," and the building was henceforth known as the Cutlerian Theatre. It was said by James Elmes in his *Memoirs of the Life and Works of Wren* (1823) to be "a perfect study of acoustical and optical architecture." Garth in his *Dispensary* describes the dome thus,

> A dome, majestic to the sight,
> And sumptuous arches bear its oval height,
> A golden globe plac'd high with artful skill,
> Seems, to the distant sight, a gilded pill.

The various annual lectures of the College were delivered in the Theatre, but its primary purpose was for the demonstration of dissections. Under a statute passed in the reign of Elizabeth I the College was entitled to receive annually up to four (later increased to six) bodies of executed felons for this purpose—"ad incrementum cognitionis medicinae"—provided that the remains were

given decent burial. A note in the College's possession, dated 24 May 1694, details the expenses incurred in bringing bodies from Tyburn, listing charges for transport, for refreshments on the journey, and for materials used in "washing the College and Theater," amounting in all to £3.14s.3d.

Company of Barber-Surgeons

Two Fellows of the College also had some connection with the Barber-Surgeons' Company in its early years. The famous painting by Holbein of Henry VIII with the Barber-Surgeons (once generally described as "Henry VIII granting the charter to the Company of Surgeons," but now thought to commemorate the union of the Barbers and Surgeons by Act of Parliament in 1540—a union which was not severed until 1745) portrays, among other court officials, two of Henry's own physicians, Dr. John Chambre and Sir William Butts. The former attended the King throughout his reign; he was the first in order of the six physicians named in the College charter and was elected one of its Censors in 1523. The latter seems never to have filled any collegiate office, but was held in high estimation by his colleagues, being described in the *Annals* as "vir gravis, eximia literarum cognitione, singulari judicio, summa experientia, et prudenti consilio, doctor."

By an Act of 1540 physicians were permitted to include surgery in their practice, for it was considered to be comprehended in "the science of physic." Surgeons, however, as surgeons, had no more right than apothecaries to practise medicine in London without the College license, but many surgeons and apothecaries were in fact so licensed. Some surgeons were granted only limited licenses, allowing them to administer "outward applications" in particular cases, such as chronic ulcers, or affections of the eyes, or to treat specific diseases, such as madness or consumption. One such was John Banister, author of *The Historie of Man* (1578) and many other anatomical and surgical works. He was a provincial surgeon of great repute, famed also for his medical skill, and was a friend of William Clowes. As the result of a letter of recommendation to the College written by Queen Elizabeth in 1593, saying that Banister "hath doone very much good to many persons, and especially in and about our citie of London, where he desireth to end his old yeares in quietness, as I trusteth he shall do, unless he happen to be molested by any of your College by reason of his said practice,"

he was granted a license on condition that in dangerous cases he should call in one of the Fellows of the College.

In the early seventeenth century the College on several occasions attempted to restrain the privileges of the Company, but the Surgeons vigorously defended their rights, and retained them. Then, in 1689, the Surgeons sought, unsuccessfully, to promote a Bill containing a clause granting the right "for duly approved surgeons to give . . . internal medicines to their chirurgical patients." The College set up a vehement opposition, in the course of which was published *An Historical Account of Proceedings betwixt the College of Physicians and Surgeons since their Incorporation*.[5] This interesting document justifies the College's control over the practice of medicine by reference to various Acts of Parliament and to judges' decisions in court cases. It quotes examples of the special licenses granted to surgeons, and relates also how, when the Surgeons suggested that as no physician would serve in the Navy it was necessary that surgeons should be licensed to practise medicine therein, the College was called together and several Fellows volunteered to undertake naval service. The general attitude of the College was that surgeons as a body were by law not allowed to practise internal medicine without its license, but that it was ready and willing to grant a license to any individual surgeon who submitted himself for examination and was found competent to practise.

The College does not seem to have been under the necessity of inveighing against surgeons for illegal practice to quite the same extent as against apothecaries. It is worth noticing, however, that in the eighteenth and nineteenth centuries no man could be a member of the Royal College of Physicians and the Royal College of Surgeons (as the Surgeons' Company had become) simultaneously, or indeed of one of them and of the Society of Apothecaries. A member of one had first to be "disfranchised" from it before he could join another; the certificate of disfranchisement states that he ceased "being entitled to any privilege, franchise or immunity which doth, or may, belong to a Member thereof, and that he is, hereby, released from all obligations to the said College."*

A clause in the 1858 Medical Act provided that any two examining bodies might "unite or co-operate in conducting the examina-

* The period during which the College of Physicians enforced disfranchisement lasted from the mid-eighteenth century, when the condition first appeared in the College Statutes, till 1835, when the Statute was abrogated.

tions required for qualifications to be registered under this Act," and the two Royal Colleges almost immediately began negotiations to this end. It was not, however, until more than twenty years had elapsed and several amending Acts been passed that they succeeded, in 1883, in forming what is now known as the Conjoint Board. The examinations for the joint qualification so instituted were held in a hall built specially for the purpose on the Victoria Embankment; today this building is occupied by the Institution of Electrical Engineers, and the Conjoint examinations are held in the new hall in Queen Square.

ACKNOWLEDGMENT

My thanks are due to Sir Charles Dodds, Harveian Librarian of the Royal College of Physicians, whose interest was the inspiration of this article, to Sir Harold Boldero, Registrar, for permission to quote from the *Annals* of the College, and to Mr. L. M. Payne, Assistant Librarian, for much advice and assistance in collecting the material.

REFERENCES

1. CHARLETON, WALTER. *Enquiries into human nature.* London, R. Boulter, 1680. 366 pp.
2. CROOKE, HELKIAH. *Μικροκοσμογραφια. A Description of the body of man.* 2d ed. London, M. Sparke, 1631. 1108 pp.
3. FRENCH, JOHN. *The London distiller.* London, T. Williams, 1652. 64 pp.
4. GARTH, SIR SAMUEL. *The Dispensary: a poem.* London, J. Nutt, 1699. 86 pp.
5. *AN HISTORICAL account . . .* (Anon.) [London, c. 1690.] 8 pp.
6. LONDON. COMPANY OF DISTILLERS. *The Distiller of London.* London, R. Bishop, 1639. 72 pp.
7. MERRETT, CHRISTOPHER. *A Short view of the frauds and abuses committed by apothecaries.* London, J. Allestry, 1669. 53 pp.
8. ROYAL COLLEGE OF PHYSICIANS OF LONDON. *Case of the College of Physicians, defendants, on a writ of error brought by Wm. Rose. . . .* [London, 1702.] 3 pp.
9. ROYAL COLLEGE OF PHYSICIANS OF LONDON. *A Short account of the proceedings of the College in relation to the sick poor of the City. . . .* London, 1697. 16 pp.
10. SOCIETY OF APOTHECARIES. Briefe of the A.'s cause . . . [London, c. 1638.] Broadsheet.
11. SOCIETY OF APOTHECARIES. *A Charter granted to the apothecaries of London, the 30th of May, 13, Jac. 1, translated. . . .* London, F. Leach, 1695. 25 pp.
12. SOCIETY OF APOTHECARIES. *Reasons . . . against continuing of the act for better viewing, searching and examining of drugs. . . .* [London, 1723?.] Broadsheet.

What Became of the Degenerate?
A Brief History of a Concept

RICHARD D. WALTER*

THE DEGENERATE'S PRAYER

Have pity upon us, good Lord, because we do the things we ought not to do, and we do not the things we ought to do—and there is no health in us. But Thou, O Lord, knowest that we are the tainted offspring of forefathers beggared in their bodies by luxury and riotous living, and of fathers who sapped their manhood in vice. Pardon our murders, our brutalities, our thefts, our crimes of cunning and cruelty, which we daily commit. Put sorrow and penitence in our hearts. Forgive our fellow men, who have helped to cripple our childhood and who now torture us and curse us—for they are blind. Teach them how to be just to us, for Thou, O Lord, knowest the heart of man. Our hope is in Thee for justice, and our trust for mercy.

(From *Unfinished Man*[6])

As a term of contempt, "degenerate" is still occasionally heard, but degeneration is rarely advanced as a serious explanation for any human phenomenon. However, in the recent past, the concept of degeneration as applied to man was an important framework for explanations dealing with psychiatry, sociology, criminology, and eugenics. A brief account will be presented of the origin of the idea of degeneration with its initial application to psychiatric theory and its eventual extension to other fields.

Degeneration and atavism can probably be thought of as a very broad concept, with features appearing throughout history. This more general aspect of the subject would include the normal decline of man from the pristine state of the "noble savage," or the more theological viewpoint of man's regression after the original sin. Indeed, the retrogressive changes in man from his state in the Garden of Eden is a large subject considered in theology under the technical term degeneracy. The status of groups and races has also been discussed under this subject, such as the controversy during the eighteenth and nineteenth centuries over the supposed degeneracy of the Americas. Biologically, the broad idea has been described or suggested whenever explanations are made of the changes occurring in organisms—either in the individual or the

* The University of California at Los Angeles Medical School, Department of Medicine, Division of Neurology, Medical Center, Los Angeles, California.

species. This account will deal with a smaller segment of the general subject.

Benedict Augustus Morel (1809-1873) is generally considered to have originated the concept of degeneration in this more psychiatric sense. In another connection, he was also the first to have used the term dementia praecox. His major works published in 1857 and 1860[1,2] advanced the idea of there having been an original perfect type of the human race. Degeneration was then considered to be the pathological alterations in this primitive type resulting from the influence of environment and the actions of the parents on their offspring. This was clearly a statement of the inheritance of acquired characteristics. In addition, a progressive, or really retrogressive, process was described in which the influence of diet, toxins, climate, disease, and moral depravities of one generation induced a high proportion of neurotics, criminals, and paupers in the next generation. The degenerative influence was then transmitted to the third generation, which had a high number of insane, mental defectives, and monstrosities. This in turn gave way in succeeding generations to defects of severe degree producing sterility and the eventual dying out of the tainted family.

Along with the changes in symptomatology with time, Morel described four main classes of degeneration. These are:

1. Persons of nervous temperament, neurasthenia; hysterical women and people who, while very eccentric, are fully conscious of their own state.

2. Persons who have unimpaired intellectual processes but who have a disturbance of their feelings and impulses, and consequently great defects and perversity in morals.

3. Imbeciles with defects in intellect so that the instincts hold sway over the understanding.

4. Idiots, in whom the whole mental development is extremely low.

The "stigmata of degeneracy" were also catalogued by Morel and consisted of the now familiar distortion of the ear shape, facial asymmetry, supernumerary digits, high-domed palates, etc. Besides these physical manifestations of degeneracy, a long list of mental symptoms was presented that were considered to be the psychic counterpart of the physical findings. Morel seemed to attempt an explanation of nearly the entire gamut of psychopathology, though basing his concept originally on the more obvious and severe forms of mental deficiency.

As might be expected, degeneration also appeared as an idea prior to the time of Morel, first being used as a term in the explanation of the origin of species by Buffon in the 1700's. Osborn[3] states that Sylvius (1478-1555) criticized Vesalius who had asserted that the anatomy of Galen could not have been founded upon the human body, because he had described an intermaxilliary bone, which is found in lower animals and not in man. Sylvius defended Galen by maintaining that man may have had an intermaxillary bone in Galen's time, but "It is luxury, it is sensuality, which has gradually deprived man of this bone." Variations of the principle of the transmission of acquired characteristics also appear in the works of Linnaeus, Lamarck, Erasmus Darwin, and others.

In the field of psychiatry, the concept of degeneracy proved quite popular in many circles. J. J. Moreau (1804-1884), who is said to have the same relationship to Morel as Wallace to Darwin, advanced the idea of the close similarity between genius and degeneracy. Neurasthenia, an equally vague and inclusive category, was the popular diagnosis around the turn of the century. Gilbert Ballet, in a clinical treatise on neurasthenia, stated that the "stigmata of degeneracy" were so common among this group, that degeneration, whether hereditary or acquired, must be considered as a possible etiology for neurasthenia.[4]

Though it was among the French psychiatrists that the concept of degeneration became most popular, many men in this country and others became adherents of the idea. The trial of Charles J. Guiteau, the assassin of President Garfield, did much to publicize the idea of degeneration. Guiteau, usually described as a "disgruntled office-seeker," had a family history of considerable disease and psychopathology. The psychiatrists aligned with the defense largely contended that Guiteau was not responsible, that he was suffering from a type of hereditary insanity. One of the main controversies centered around the neuropathological changes in the central nervous system as a "cause" of the symptoms of degeneracy.

A very complete exposition on degeneracy was written by Eugene S. Talbet in 1898.[5] This work was largely an attempt to integrate the newer findings regarding heredity and medicine with the older concepts of Morel. Talbet pointed out that the idea of the original perfect race, as maintained by many of the earlier writers on evolution, had theological overtones, and that, by and large, the determinism in popular thought due to Calvinistic predestination had in English-speaking countries fought for the doc-

trine of degeneration. Acceptance of the concept was also simultaneous with the general acknowledgment of the idea of evolution in the 1870's.

The "psychopath" was considered to be the prime example of degeneracy by Albert Wilson, writing in 1910.[6] Wilson used cytoarchitectonics to bolster his contention that the degenerate can best be described as "unfinished." This incomplete, or unfinished, man does not quite constitute the sociopathic personality disorder of today, but clinically ranges from the mental defective with congenital anomalies to the "criminal type." They were considered to be unfinished because of a lack of the small pyramidal cells that were believed to be the essential elements in the performance of the higher associational processes.

Some workers in criminology also contributed to the popularization of the concept of degeneration. Foremost among these was of course Cesare Lombroso (1836-1909) who first began publishing his theories regarding the criminal type in 1876. In the extreme, he maintained that there is a born criminal, whose behavior has been hereditarily determined and who is biologically inferior to the normal individual. He further extended the list of the "stigmata of degeneracy," and felt that there was a correlation between the type of crime and the physical varations of the degenerate. A modern physical anthropologist[7] has also said that a correlation exists between the type of crime and certain aspects of the body of the criminal, though not necessarily accepting the concept of degeneration.

In contrast, Marandon de Motyel[8] in 1892 maintained that criminality is a reversion—an outgrowth of civilization that is unknown among savage and primitive peoples, and that degeneration and crime, instead of being allied conditions, are opposed to each other. He then felt that in insanity criminality exists in an inverse ratio to the degree of degeneration.

Another example of the use of the concept of degeneracy appeared in 1915. William Healy, the director of the Psychopathic Institute, Juvenile Court, Chicago, contributed a volume on his work with delinquents.[9] He states that "It is undoubtedly true that most of these constitutional inferiors may be regarded as degenerates, but many of the so-called degenerates belong to other classes. We ourselves are highly in favor of dropping the term degenerate, and classifying individuals by much more definitive terms. The notable, comparatively small number of female constitutional

inferiors found in our work may be explained, I think, by the greater freedom and restlessness of the male sex."

In the field of sociology, the idea of degeneration was most forcefully adopted by Max Nordau (1849-1923) in the early 1880's. His book[10] was widely read and discussed in both Europe and America. A review in the *Chicago Tribune* stated: "A most absorbing book, . . . likely to displace 'Trilby' as a subject of popular discussion." Relying mainly on the concept advanced by Morel and Lombroso, Nordau maintained that degeneracy and neurasthenia were becoming increasingly prevalent among the "upper strata" of the population, that a severe mental epidemic was in progress. The etiology of this plague was "the vast fatigue which was experienced by the generation on which the multitude of discoveries and innovations burst abruptly, imposing upon its organic exigencies greatly suppressing its strength, which created favorable conditions under which these maladies could gain ground enormously, and became a danger to civilization." Singled out as particular examples of degeneracy were Tolstoy, Wagner, Ibsen, Nietzsche, and Zola. He also considered moral insanity, unbounded egotism, impulsiveness, emotionalism, mental weakness, dejectedness, and mysticism to be the prime psychic manifestations of degeneration.

This work of Nordau evoked a considerable counter-reaction. William Hirsch devoted an entire volume[11] to a point-by-point denial of Nordau's thesis. Relying upon the established evidence in heredity and psychology, Hirsch effectively repudiated many of the more blatant claims of Nordau. Nicholas Murray Butler wrote an introduction to a book by an anonymous author *Regeneration, a Reply to Max Nordau.*[12] Both the introduction and the body of the work attack Nordau vehemently and at times quite personally. Butler states: "Degeneration constitutes Nordau. He is himself an abnormality and a pathological type. Every large hospital for the insane knows his representative—the one sane man in a world of lunatics." The unknown author demonstrates an anti-German sentiment, maintaining that Nordau is under German influence and that the English are the only hope of civilization in that they are practical, energetic, and daring pioneers heading the march of progress.

In this country a review of the concepts of Morel on degeneration was presented by Samuel Royce about the same time as the appearance of Nordau's *Degeneration.* Much milder in tone and

less alarming, Royce calls for an educational reform to combat the racial degeneration. He wrote that "Education is the only solution of the great social problem arising from hereditary defectiveness and consequent increase of pauperism, misery, crime and insanity."[13]

Adolf Meyer in 1895[14] presented a historical review of the concept and stressed the changing philosophical position regarding the idea of the perfect man, which was swept away by the doctrine of evolution. He also called for a careful tabulation and statistical survey of the physical stigmata as observed among psychiatric and mentally defective patients.

From another viewpoint, the stigmata appear to be another chapter in the story of body devination. Generalizations regarding man's character and abilities based upon cranial contours, or estimation of temperament based on physiognomy, or man's status as a degenerate because of ear changes probably have certain common origins and mechanisms. General body configuration, habitus, constitution, and somatotyping may appear in modern psychiatry as a greater sophistication of such devination.

The subject continued after the turn of the century with some articles, such as "Was King Edward a Degenerate?"[15] appearing in the literature. An extreme viewpoint in sociology appeared in the early 1920's with Lothrop Stoddard's *The Revolt Against Civilization*.[16] His main claim was that the greatest threat to civilization was not Bolshevism, but the drawing off of its superiors by factors such as the selectively reduced birth-rate and the saturation of the stock with dullards and degenerates. Eventually this diluted race could not maintain a first-class civilization.

Eugenists early adopted many of the claims of the devotees of degeneration. In the 1920's, such works as *The Survival of the Unfittest*[17] and *Race Decadence*[18] appeared stressing the direct hereditary transmission of such traits as self-control, self-respect, and the inherent capacity of the individual for development. An extreme proposal was made in 1927 that citizens should be graded according to eugenic value, and that hereditary titles be granted to distinguished members of the highest grades, a concept not completely foreign to more recent times.

Eugen Bleuler, in his textbook,[19] neatly summed up the present-day viewpoint. Though maintaining the designation of "degenerate" essentially as a synonym for psychopathy, he states: "The term designates very different but very vague ideas, and most observers

are so little conscious of this that they do not at all express themselves about it, but secretly permit one meaning to pass over into the other, or suddenly substitute one for the other." He went on to describe the four contemporary meanings of degeneration, which were:

1. Morel's concept of the progressive, predictable degeneration in families.
2. The designation of families as degenerative in which insanity is common.
3. The physical stigmata of degeneracy.
4. The degenerative psychosis.

In biology, the concept of degeneration was applied to a clearly stated biological phenomenon. E. Ray Lankester was one of the first to present a detailed analysis showing the loss of certain structures and their modifications in animals.[20] With parasitism as a model, he stated that degeneration was the gradual change of structure in which the organism became adapted to less varied and less complex conditions of life. The forces of natural selection could act on the structures of an organism so as to produce an increase in the complexity of its structures, or to diminish the complexity of its structure, or to maintain the status quo. The loss of complexity, or degeneration, in zoology at least, did not become associated with moral or value judgments.

In medicine, the works of Julius Bauer[21] and Nicolas Pende,[22] for example, demonstrate that the concept of degeneration became considerably modified and a subject related to constitution. Bauer states: "In 1917 these considerations led me to the segregation of individuals exhibiting an accumulation of various constitutional abnormalities. Since each such abnormality represents a marked deviation from the average type of the genus and may, at least potentially involve a diminished adjustment to the environment, the term 'Status Degenerativis' was chosen to signify this state of biological inferiority, lower resistance, greater morbid predisposition, in brief, the degenerative character of its possessors." The slang expression for this idea, which is probably a part of the in-group language of every medical school, is "piss-poor protoplasm."

As a framework for explanations in such fields as psychiatry, criminology, sociology, and some aspects of biology, degeneration has had a fairly extensive history. Though the original concepts of Morel, Lombroso, and Nordau have become obsolete, the phe-

nomena that degeneracy attempted to explain are still of great current interest and far from completely understood. In today's concepts of the etiology of psychiatric disease, the old dichotomy of nurture versus nature still appears under more subtle terms, though today's emphasis is upon nurture. This also applies to the subject of criminology, as well as the larger areas termed race and culture. Any concept that has been used for explanations in so many connections probably deserves interest, even if only historical.

References

1. Morel, B. A. *Traité des dégénérescences physiques, intellectuelles et morales de l'espèce humaine et des causes qui produisent ces variétés maladives.* Paris, 1857.
2. Morel, B. A. *Traité des maladies mentales.* 1860.
3. Osborn, H. F. *From the Greeks to Darwin.* New York, The MacMillan Co., 1902.
4. Ballet, Gilbert. *Neurasthenia.* Paris, Henry Kimpton, 1908.
5. Talbet, E. S. *Degeneracy—its causes, signs and results.* London, Walter Scott, Ltd., 1898.
6. Wilson, Albert. *Unfinished man.* London, Greening and Co., Ltd., 1910.
7. Hooton, E. A. *Why men behave like apes and vice versa.* Princeton University Press, 1941.
8. de Motyel, Marandon. Criminality and degenerescence. *Amer. J. Insan.*, 1892, *49*, 92.
9. Healy, William. *The individual delinquent.* Boston, Little, Brown and Co., 1915.
10. Nordau, Max. *Degeneration.* London, William Heinemann, 1895.
11. Hirsch, William. *Genius and degeneration.* New York, D. Appleton and Co., 1896.
12. Anonymous. *Regeneration—a reply to Max Nordau.* New York, G. P. Putnam's Sons, 1896.
13. Royce, Samuel. *Deterioration and the elevation of man through race education.* 2 vols. Boston, Lee and Shepard, 1880.
14. Meyer, Adolf. A review of the signs of degeneration and of methods of registration. *Amer. J. Insan.*, 1895, *52*, 344.
15. Chalfant, Robinson. Was King Edward the second a degenerate? *Amer. J. Insan.*, 1910, *67*, 445.
16. Stoddard, Lothrop. *The revolt against civilization.* New York, Charles Scribner's Sons, 1923.
17. Armstrong, C. W. *The survival of the unfittest.* London, C. W. Daniel Co., 1927.
18. Sadler, W. S. *Race decadence.* Chicago, A. C. McClurg, 1922.
19. Bleuler, Eugen. *Textbook of psychiatry.* New York, The MacMillan Co., 1924.
20. Lankester, E. R. *Degeneration—a chapter in Darwinism.* London, MacMillan and Co., 1880.
21. Bauer, Julius. *Constitution and disease.* New York, Grune and Stratton, 1942.
22. Pende, Nicola. *Constitutional inadequacies.* Philadelphia, Lea and Febiger, 1928.

Thomas Beddoes and the Treatment of Spinal Curvatures at Bristol about 1800

A. C. TODD*

MATERIAL which throws light on Thomas Beddoes is always welcome for, as is generally known, not only was he careless and indifferent about the preservation of his papers and correspondence, but his restless energy was dissipated over such a wide variety of activities that the whole man still eludes complete identification. Seventeen letters from Beddoes to the younger Josiah Wedgwood, written during the last ten years of Beddoes' life (1798-1808) and preserved among the Wedgwood papers at Stoke-on-Trent, England, are of some interest for his views on spinal curvatures.[1] Their origin lies perhaps in the *Orthopaedia* of Nicholas Andry of 1741, while their development anticipates some of the work of John Shaw in his *The Nature and Treatment of Distortions of the Spine* of 1823.

Andry, Professor of Medicine in the Royal College of Physic at Paris, laid the foundations of orthopaedic practice in the eighteenth century by his grasp of the essential fact that muscles are the chief instruments in the shaping of a child's body. Through his remedial exercises he demonstrated that deformities of the body due to one form of movement or habit can be corrected by movements and habits of an opposite kind, especially when combined with massage and proper periods of rest. In England, John Hunter likewise regarded the muscles as the most educable of all the structures of the body which, by exercise and rest, could be coaxed back to health. Though both Andry and Hunter knew that deformities were produced by a disordered action of the muscles, neither of them had a clear conception of the nature of that disorder because of their lack of knowledge of the machinery of nerve cells and nerve fibres which controls the workings of the muscular system. It was not until the 1820's that orthopaedics were carried a stage further when John Shaw at the Windmill Street Medical School in London applied himself to the treatment of spinal deformities in children and concluded that spinal curvatures were due to a weak-

* Penzance, West Cornwall, England.

1 I am indebted to the Hon. Josiah Wedgwood of Stoke-on-Trent for his kind permission to quote from these letters.

ness in the muscles which balanced the vertebrae when the body was held erect. Though he could not explain why the spinal muscles became weak, he observed that they broke down most frequently during spells of active growth. So instead of prescribing the long periods of rest, usually associated with lying on inclined planes or being supported by spinal machines, he condemned them as weakening the muscles through inactivity. Like Andry, he concluded that the proper treatment for weak spinal muscles was not rest, but graduated exercises, followed by rest.[2]

The interest of Beddoes' views on spinal curvatures lies in the fact that the individual case brought to him was complicated by a worried parent who thought that his daughter's curved spine might be due, not so much to a weakening of the muscles, as to the disintegration of the vertebrae by tuberculous ulceration. The younger Josiah Wedgwood had two children, Josiah and Sarah Elizabeth, and it was about the latter that Wedgwood sought the advice of Beddoes. There was indeed every reason why Wedgwood should do this, because his family had provided financial backing for the Pneumatic Institution at Bristol. But Beddoes was also the practitioner to whom to turn when cases seemed hopeless, because optimism was one of his outstanding virtues. Often, of course, this feeling of confidence led him to claim doubtful successes, based on empirical methods rather than theory. Davies Gilbert, an Oxford friend and President of the Royal Society, said that Beddoes had a muddling intellect, and this indeed may have been true, but it cannot be said that he ever disappointed his patients about his hopes of effecting cures.

His first letter to Wedgwood (23 April 1799) contained a convincing account of the successes of the Pneumatic Institution, not the least being a certainty that he had "completely established the power of digitalis in consumption." He claimed that it would cure four out of every five cases, provided that they were not in the last stage of development. He was equally sure that he and his assistants were on the eve of great discoveries of remedies for those diseases which could not be cured by medicine, such as "palsy and some other diseases of debility." His reason for this assurance was their discovery of "a species of air of which a small quantity has repeatedly exhilarated different persons in the most remarkable manner, and a larger quantity produces perfect intoxication WITHOUT subsequent debility." This exhilarating air—laughing gas—he

2 Arthur Keith, *Menders of the maimed*. London 1919.

thought could be turned to good account to rejuvenate the old and energize the languid. "Were I old or languid I would go through a course of it," he said to Wedgwood. Only Davies Gilbert and Humphry Davy perceived the properties of the new gas as a possible means of reducing pain in operations. It was typical of Beddoes that, absorbed as he was with wasting diseases, he should have missed the point of anaesthesia.

It was not that he lacked enthusiasm so much as concentration. He possessed many of the qualities of the research worker, energy, a capacity for work, and a boundless curiosity, but suffered from a highly developed social conscience which hurried him into projects without adequate preparation and entangled him in political controversy, which drained him of the energy which should have been expended on his medical research. Dismayed and distressed by the physical pain and moral degradation which he saw around him in Bristol, he believed that it was only by a concentration of medical power in a single institution that anything could be done to alleviate human suffering on any appreciable scale. The primary field of investigation at the Pneumatic Institution was to be consumption, but in time it came to include also asthma, palsy, diabetes, and cancer. Experimenting on himself by inhaling hydrogen and oxygen, he agreed with the conclusions of Thomas Percival that consumptives seemed worse after oxygen treatment and proposed to try cures by decreasing the oxygen in the air, what he called "reduced air." James Watt built him a mobile "air-apparatus" so that a patient could use it in his own home and the treatment be thus prolonged. Yet, after two years of experiment, Beddoes could only admit to his friend Davies Gilbert that, while "airs are efficacious in consumption," he could not tell to what extent or degree. Pneumatic medicine or the employment of "factitious airs," he reluctantly confessed, appeared to have only an occasional effect and in advanced cases actually aggravated the consumption. But in spite of his failure, no one could doubt either the strength of his humanitarianism or his passion for human dignity. Writing to Tom Wedgwood (29 July 1803) to thank him for a further donation of £100 towards the Pneumatic Institution, he remarked: "I think much as you do about this world and believe there is hardly any possibility of doing uncompensated good but by preventing sickness." But he knew that not all believed him and that there were skeptics who would say: "Those whom you may

preserve not knowing from what they have been preserved, to what does the good amount?"

Josiah Wedgwood was ready to give an answer, because he feared that his daughter's curved spine indicated that she was consumptive. Beddoes, far from well (he had nearly died of cystadenocarcinoma, more generally known as "water on the breast"), did not spare himself to reassure his friend that he was being unduly pessimistic, and that the curvature was due to a weakening of the spinal muscles, common enough in adolescent girls. From his own experience, he told (19 June 1807) how at the Pneumatic Institution he had registered more than 10,000 patients, among whom were an unusual number of children with curved spines, or with bones soft or ulcerated. Under treatment and provided patients were "moderately attentive" to the advice given, it was claimed that there was "not one that did not do well." The advice and treatment took the form of these instructions:

> To straighten the spine, I prefer lying down first, then raising the trunk by degrees in a chair with a moveable back, first as equally effectual, secondly as incapable of doing mischief to the other parts, thirdly as more merciful. Then as much attention should be paid to the Constitution as to the weaker part by giving the muratis steel or what may best suit.

This treatment he regarded as more satisfactory than that of some practitioners, who used "machinery" for straightening the spine, and more likely to save "the patient from consumption." That his daughter was a possible T.B. case was the measure of the anxiety of Wedgwood.

He had already decided to take her to London to be examined by Carlisle, a surgeon of whom Beddoes thought highly, "a very able man and as good a surgeon as any in London." He assured Wedgwood that Carlisle would make a thorough examination to see "how far the vertebrae are inflamed—as is shown by local heat, swelling, pain or pressure, commencing hectic fever—also if there is any weakness of the lower limbs." While waiting to consult Carlisle, Wedgwood wrote from his lodgings at 24 Charles Street, St. James', somewhat appalled at the prospect of Elizabeth having to undergo a treatment which necessitated a long period of inactivity, lying on her back. What was the minimum time such treatment could be guaranteed to effect a cure? Beddoes (27 June 1807) thought not less than two months, but assured him that in his own experience this was really "a very small evil" and especially so in the case of girls, for "girls work and read." Furthermore, a long period of rest

promoted physical growth. "The health improves prodigiously from the lying, I believe, as probably the whole system of the children whose bones grow spontaneously soft requires full respite from exertion. They grow more than under any other circumstances. The constraint is little felt but at first. I now attend a little spirited spoiled child who was treated with machinery till the vertebrae became ulcerated and gave way. Though under 3 years of age, he has lain down four months and very contentedly. Yet he was obliged to have setons, a terrible evil for a child. The best thing to lie upon I believe is a hard matrass—so they lie with the head taken off the spine and not to be heated, it is sufficient."

The correspondence gives no evidence about the results of the consultation with Carlisle. Perhaps he recommended further treatment under Beddoes, for two months later (18 August 1807) the latter was still prescribing.

> Most of the curvatures of the spine which I have seen have been lateral and so evident that children's friends have perceived them and in the course of growth, the spine has got straight upon lying down, taking medicines, friction to the parts, hanging by the hands afterwards.

If there was no pain, Elizabeth could be "rubbed in the curved parts for half an hour or more twice a day and not very hard, dry or with oil," and given iron and digitalis daily. But once again he emphasized the need for lying down in a prone position because it never failed to straighten the spine or to give "an increase of robustness." If Wedgwood doubted this, there was a method by which it was possible to record progress:

> I do not know if it would not be good to mark the skin along the line of curvature with solution of silver in Nitrous acid. As the skin is not drawn with the vertebrae, these will get nearer the perpendicular and desert the superficial mark. But you must dye deep or renew, or the mark will become obliterated.

When the disorder had been arrested and the patient became reasonably robust, remedial exercises could follow.

> I think it very useful . . . to hang upon something like the top of a door—suppose a roller fixed high and covered with cloth, the back being turned towards the door and the hands grasping backwards. This for a few minutes with both hands, and a little with one hand.

But progress was not fast enough for Wedgwood and after seven weeks he seems to have abandoned the idea. Beddoes was disappointed, especially as there had been no signs of "positive discouragement," but he did not hesitate to suggest an alternative

method (1 October 1807), that of swinging the patient by the legs. This often helped to straighten the spine, but in the case of Elizabeth he felt bound to point out two objections—she was too tall, and she was also a girl in her teens. To overcome the former would require great strength, to overcome the latter some considerations in the matter of delicacy. Neither would be insuperable "if I could contrive it well." Beddoes, however, seems to have thought out a compromise.

> I certainly think there cannot be any objection to repeated short swingings by the arm of that shoulder which stands most out. Swinging by the arm does great things in flattening the scapulae. I think its primary action on the muscles, but it does stretch the bones too. Strip a child, look at his naked shoulder blades, suspend him by his arms, and observe how much flatter his shoulder blades lie on the back. In order to expedite ossification, I beg to suggest a good deal of dry rubbings (or with soap liniment) on the curvature.

He had also modified his method of recording progress.

> I have been trying this additional mode of ascertaining change in curvatures. Make two marks one above another on the spinous processes of the curvature. Then fix the leg of a pair of compasses on the first and place the other leg horizontally at any distance. Mark the point. Do the same on the other side. Repeat this from the second mark. At any time afterwards, in the SAME ATTITUDE and try the distances. Supposing on moles or artificial marks on the fleshy parts of the arms, legs or thighs, you were to measure from time to time to see if the limbs thicken a little or do not decrease.

In the winter of 1807-1808 Beddoes was very much occupied in relieving the anxieties of a parent who thought that progress was neither visible nor fast enough. On the 11th of November he was recommending a change of medicine—"burnt spunge, 15 grains taken in a pill with soap twice a day and later increased to 20," and advocating that Elizabeth should try lying down in an inclined, rather than horizontal position, "reclining on an inclined plane made with hinges like a bed-drwr." But once again he warned against using "machines" because they were likely to damage the pelvis. On the 18th of November he was advocating the use of friction either by applying ether to the skin or by "a mustard poultice, included completely in a cloth and laid largely on the part affected." The next day he was garrulously emphasizing the utter impossibility of giving any guarantee of "how long a curved spine ought to be in rectifying" unless "one knew the average time at a given age in which the whole spine is changed." Results through "posture and machinery" were possible where ossification was not yet complete, but generally it was doubtful whether a spine which had

once been found to be so could be straightened. The great hope was that with Elizabeth the bones had not been completely formed, but even if they had, Beddoes said that he would still be willing to try further expedients for the very good reason that "I think by great patience and art, the incurvated spine of an adult might be rectified, where the vertebrae are not destroyed; so that the third and fourth being absorbed, the second and fifth for example touch, and perhaps even here Nature might be made to reproduce them." About the use of gases he was cautious:

> I would say little about the use of gasses. But from a very careful series of experiments on rabbits, puppies and kittens, I am persuaded that oxygen gas greatly promotes ossification in growing animals. I know of no harm which it could do, unless it quickened the pulse and then it ought to be discontinued.

Wedgwood, however, continued to be critical of the treatment prescribed by Beddoes, and particularly after he had consulted Henry Cline, at one time a student of John Hunter and now Senior Surgeon at St. Thomas's Hospital, London. Cline told him that softness in bones was caused by lack of muscular exertion, but this Beddoes denied and claimed that rest was essential because the bones had to grow slowly owing to a chemical defect in their composition, "the defective secretion of earthy phosphates" (9 January 1808). He was ready to admit that some exercise might excite the "arteries to throw out more phosphates," provided the exercises were not carried out in the erect position. One way of doing exercises in the prone position would be to "draw up weights over a pulley" but if it proved in the slightest degree exhausting it was to be discontinued. About this he was quite firm:

> I never met with an opinion more mischievous in its generality than that strength cannot be acquired by "inaction." In patients reduced by fever, rest is necessary to the acquisition of strength. In softness of the bones, it is so generally useful in this view that I have never heard of an exception. Certainly I have always seen the very reverse. There is a degree of exertion that will recruit and another that will exhaust any person in health. In sickness very often much exertion exhausts and whether there are not disorders in which all exertion is directly or indirectly injurious can be learned only from observation.

The condition of the patient was thus the governing factor. If Elizabeth had a clearly marked curvature, then rest was essential. But in the case of her brother Josiah, who had no curvature, but whose bones might be soft, exercise could be given to strengthen them. But what kind of exercise? The best, thought Beddoes, was

that which he called "drilling," and especially if undertaken by a specialist. Of this kind of exercise he had some immediate experience:

> There is here [at Bristol] a man whose equal I have never seen. He is called a dancing master. But his object seems to be to rectify the form, in judging of which he has as much correctness as an anatomist who had made this study of his life, and his modes of correction always by the position of the body are simple and efficacious. He has been practising upon eight or ten awkward figures under my eye. This sort of drilling would probably do Josiah much good. His coming to my children is quite a treat to them.

There was little more that Beddoes could do to help Wedgwood, and he himself was already a sick man who found writing letters physically exhausting. But in the summer of 1808, six months before he died, he was able to make a judgment on Elizabeth's general condition from information supplied by Wedgwood:

> Your statement gives these facts:
>
> 1. Constitution rather improved as shown:
>   (a) by sufficient increase of mass and height.
>   (b) freedom from fevers.
>   (c) looks better than when she began to lie down.
>   (d) good spirits.
> 2. Local disorder less:
>   (a) curvature somewhat diminished.
>   (b) one of the spinous processes having been reduced to its natural size.

This improvement Beddoes claimed to be the result of rest, and further progress could be expected if she continued to follow his instructions for another two months.

> And though it seems hard to keep a young person from the Spring, still she may be in the condition to lose more than she will gain by any exertion. And you may have a couple of months yet which you need not much regret. To expedite the defective ossification, more stimulating applications may be yet made to the spine, e.g. hot water, enclosed in a bladder to produce slight pain, twice a day. I would recommend a solution of muriate of magnesia in such doses as shall excite the bowels in the slightest degree beyond the natural, as producing an additional motion in 2 days or making the present more relaxed. Muriate of magnesia I make by saturating common marine acid and water equal parts with magnesia and I give this mixed with a saturated cold solution of sulphate of magnesia in doses of 2-5 teaspoonfuls in milk and water with liquorice or what you please.

But neither rest nor exercise completely removed the curvature of Sarah Elizabeth, though her handicap does not seem to have prevented her from living a long and useful life. Her bowed and spare body, supported by a stick in winter and a parasol in sum-

mer, moved with energy and determination along the roads of industrial England, bent upon acts of charity and benevolence in the Wedgwood tradition. Deprived of the blessings of marriage and a family because of her deformity, she was acknowledged as one of the most unselfish women who ever lived. A woman who, in matters of dress (according to her father), "goes on the principle of wearing the nearest to inadmissible she can" because she wanted her money to give to the sick and the poor, she founded Sunday Schools and taught in them, was in continual need of protection from beggars, cranks, and imposters, and lived to the incredible age of 87, dying on 7 November 1880.[3] By that time the work of Bauer and Sayre in America and Lane and Jones in England had revolutionized orthopaedic practice, bestowing upon it techniques oceans apart from the early gropings of Beddoes. But those gropings were not without their importance, and if medical opinion is critical of his preoccupation with rest instead of exercise, the longevity of Sarah Elizabeth would seem to prove that the rest built up for her a frame of bone and muscle not without some sturdiness.

3 *Emma Darwin, a century of family letters 1792-1896*, edited by her daughter Henrietta Litchfield. London, 1915, 2 vols. (Vol. I, p. 155, Vol. II, pp. 35, 106, and 242.)

A Salute to Abraham Flexner

On 13 November 1956 Abraham Flexner will celebrate his ninetieth birthday, and we wish him well. The *Journal* had occasion to congratulate him at the time of his eightieth birthday (1947, 2, 487-488), and we do so once again with a renewed sense of appreciation of all that he has contributed over the years to medical education and to the cause of scientific medicine.

Mr. Flexner's knowledge of the history of university education in Europe and of individual universities placed him in a unique position to recommend reform in our American universities, and happily he was able to implement his recommendations through funds made available by the General Education Board. All this was recounted with charm and succinctness in the earlier tribute by Dr. Alan Gregg mentioned above.

In the intervening decade Dr. Flexner has gone about the day's work in his customary dynamic fashion and with unabated interest. His biography of Daniel Coit Gilman appeared near the time of his eightieth birthday. The reprinting in 1950 of his *Medical Education in the United States and Canada* (1910) must have given him solid satisfaction. And in 1952 there was published with the collaboration of Esther S. Bailey his *Funds and Foundations—Their Policies Past and Present* which is an account of the work done since the early years of the twentieth century, principally by the Rockefeller and Carnegie Foundations; it is a sound critique of current foundation practice. In 1949 Johns Hopkins University conferred upon him the degree of Doctor of Laws, and Washington University did likewise in 1950. Meanwhile he was continuing his education in art and American literature at Columbia, and at eighty-five was taking a course in "Russian Institutions" so that he might better understand the people of that country.

The Institute for Advanced Study at Princeton, which in 1955 celebrated its twenty-fifth anniversary, represents another manifestation of Mr. Flexner's vision. He conceived of its establishment, and his dream was realized through the munificence of Mr. Louis Bamberger and his sister, Mrs. Fuld.

Few men have contributed so much to the intellectual life of our time, and the impact of his achievement will be felt for generations to come.

JOHN F. FULTON, *Editor*

Notes and Queries

Edited by Dorothy M. Schullian, Ph.D.*

The Restoration of the Anatomical Theater at Bologna

On 29 January 1944 a massive bombardment from the air produced appalling devastation in the very center of the Archiginnasio of Bologna. On that same day, and only a few hours afterward, I was standing before the vast pile of ruins with my superior, Prof. Alfredo Barbacci, at that time Superintendent of Monuments in the district of Emilia. He turned to me and asked me to assume the task of salvaging what could be salvaged of the school renowned in the seventeenth and eighteenth centuries for the teaching of anatomy and dissection of cadavers and located in the venerable University of Bologna.

I accepted willingly and even gladly this new duty. My alacrity stemmed from the memories of my youth, for I recalled how as a boy I had first been guided through the famous room by my father, a naturalist at the University. I remembered with what admiration I had looked upon the whole complex of this monumental site, a site rendered even more solemn by the bronze-colored patina which the centuries had conferred upon it, and how I had marveled at its double Doric order, the partitioning of the various sections of its walls, the rich decoration of its wood, and the numerous statues carved in classic fashion. In later years, as a student in architecture at the Academy of Fine Arts, I returned to analyze the room, and I pondered then upon the originality of the woodwork in displaying a specific architectural conception and upon the far-reaching contributions to science which had spread from this room over the entire world.

So as in children's play when tiny blocks and fragments are eagerly assembled into miniature castles, I too entered enthusiastically upon the first and most difficult task of this august restoration, the long search, that is, for all those parts which lay in fragments in the debris. Thousands of splinters, hundreds of pieces of decoration, dozens of fragmentary wooden bodies had to be picked out. Crews of laborers, masons, and specialized craftsmen sifted plaster, stones, and dust, and when this task had been finished, a splendid group of willing and proficient artists collaborated in restoring for the learned world this cradle of modern medical and surgical knowledge.

I shall outline briefly the steps in restoration after the arranging and cataloguing of those portions which had been recovered. We dedicated ourselves next to planning the reconstruction. This was evolved on the basis of what was learned from the separate fragments, from a comparison with original photographs, and from the few indications, not entirely precise,

* Cleveland, Ohio.

which had been handed down in old documents.[1] It included the reconstruction of certain portions of the walls in which the old pieces were incorporated in new wood, so as to reproduce the authentic dimensions both in the planimetric sense and in vertical section. It included the reconstruction of the coffered ceiling after a preliminary covering. It included finally the reconstruction of the statues, of the abundant decoration, and of the escutcheons.[2] All these assignments of pure restoration scientifically conceived were initiated in the first campaign in 1950 and have been continued to the present day. By a calculation which is approximate, but sufficiently accurate now that a large part of the reconstruction is already finished, it is possible to state that not less than seventy cubic meters of hand-worked wood alone, engraved and carved, are here involved.

At the end of the sixth campaign of the work, which was undertaken for the Ministry of Public Instruction, we may set forth what point has been reached in the restoration. Almost entirely finished are the architectonic facings of the four walls, from the upper cornice adjoining the ceiling to the base of the lower order. The compartments of the coffered ceiling have been reconstructed, including the central one, which is in the form of an octagonal recess and contains the sculptured figure of Apollo. The compartments were determined with reference to the structure of the beams and the divisions of the underlying spaces of the spans. Defined and in course of complete restoration as regards both carving and painting is the entire collection of escutcheons comprising fifty-seven stemmata.

By now the restoration of the statues of the great physicians can be considered almost finished. As a matter of fact, in the seventh campaign the statue of Varolio will be restored and those of Argelata and Hippocrates completed. Thus in the course of a few months it will be possible to set these statues again in their proper niches and order, from the first one, to the left of the main wall (the south wall, that of the cathedra), and then to the right along the other walls, so that all twelve statues will be placed as they stood originally in their single niches—Argelata, Mondino, Varignana, Galen, Hippocrates, Sbaraglia, Malpighi, Aranzio, Bartoletti, Tagliacozzi, Varolio, and Fracassati. As for the twenty busts of physicians, including Baverio, Bertuccio, Irnerio, Apponesi, Montecalvo, Manfredi, Garzonio, Baccilieri, Mercuriali, Aldrovandi, Cardani, Maggi, Rota, Teodosi, Achillini, Leonelli, Ranuzzi, Boccadiferro, Benedetti, and Monti, it does not appear that these will need special restoration, since they are almost entirely undamaged and have already been provisionally set in their proper niches in the upper architectonic order. Restoration of the innumerable decora-

[1] See my discussions "Sul ripristino del 'Teatro Anatomico all'Archiginnasio,'" *Bollettino delle scienze mediche*, 1951, Fascicolo 2; *Il restauro del Teatro Anatomico all'Archiginnasio in Bologna*, Bologna, Arti Grafiche Minarelli, 1951; *Ricostruzione delle piante del "Teatro Anatomico" all'Archiginnasio di Bologna*, Bologna, Arti Grafiche Minarelli, 1952.

[2] On restoration of the escutcheons see my article "Notizie sul ripristino e sul restauro del 'Teatro Anatomico' all'Archiginnasio," *Bollettino "L'Archiginnasio,"* 1953, *48*, reprinted 1955 by the Tipografia Cooperativa Azzoguidi, Bologna.

tions of the architectural elements of the walls is proceeding well, as is also the ornamentation of the ceiling.

This year and next it will be our task to reconstruct the famous cathedra with the canopy which is supported by the two celebrated myologic figures, the *Écorchés,* which were carved by Ercole Lelli in 1734. Above the attic of the cathedra will be set up once more the figurative group "Anatomy with the cherub amusing himself with a femur." (This bone also was found in fragments among the other splinters, together with the nose which Tagliacozzi held in his hand and with other noses, other feet, other hands, and innumerable pieces of wooden musculature!) Finally efforts will be turned to reconstructing the quadruple row of benches, with balustrades and stairs, which runs around the walls.

I am under obligation to mention the truly international interest with which renowned scientists and numerous tourists have followed these restorations from near at hand and also repeatedly by direct visits. In the course of visits made to our Archiginnasio, the walls of which were already rebuilt between 1944 and 1948 but only in their masonry, I have continually seen scholars and tourists lingering to watch the work in the laboratory of the Superintendency of Monuments. What has impressed me most is the unanimous enthusiasm and approval which they warmly express as they admire the specialized skills exhibited there. The artists work with scrupulous care at the recomposition of the bodies, fitting in even the tiniest splinters and particles of the original members in their efforts to heal. In this unusual clinic there are in course at the present time some particularly laborious operations of restoration, namely, the re-integration of the statue of Anatomy, which had been fractured into forty-two fragments and had lost half its face, and the restoration of the statue of the great physician Fracassati. (He, it seems, wishes to conform, in the manner of modern advertising, to his family name, which means "shattered," and so we may say that the war damage has doubly shattered him!)

An interesting article on these restorations appeared in *The Johns Hopkins Magazine,* edited by Corbin Gwaltney, under the gracious title "Work of Love."[3] In addition to the annual allotment of funds which is made, as I have mentioned above, by the Ministry of Public Instruction for the restoration of this monument, I must mention also the generous contribution which was sent in 1952 by Dr. Jerome P. Webster, Chief of the Division of Plastic Surgery at Columbia University and Doctor of Medicine *honoris causa* of the University of Bologna; that of the Ente Provinciale per il Turismo, of Bologna; that of students of The Johns Hopkins University's School of Advanced International Studies in Bologna, in 1955; and finally another contribution sent recently by Dr. Webster, who is following our work with much interest and zeal. Such generous aid will be fittingly recorded. It is desirable that, in accordance with normal practice, the Superintendency of Monuments shall list, when the work is finished, the

[3] *The Johns Hopkins Magazine,* 1955, *6,* 28-31.

Fig. 1. Bologna, Archiginnasio. Detail of the Anatomical Theater. (Courtesy Fot. Villani, Bologna.)

Fig. 2. Archiginnasio. An early group of remains of the statues and wooden decoration of the Anatomical Theater, photographed soon after they were recovered from the ruins. (Courtesy Soprintendenza Monumenti, Bologna.)

Fig. 3. Anatomical Theater. Actual state of restoration of the southwest corner. (Courtesy Soprintendenza Monumenti, Bologna.)

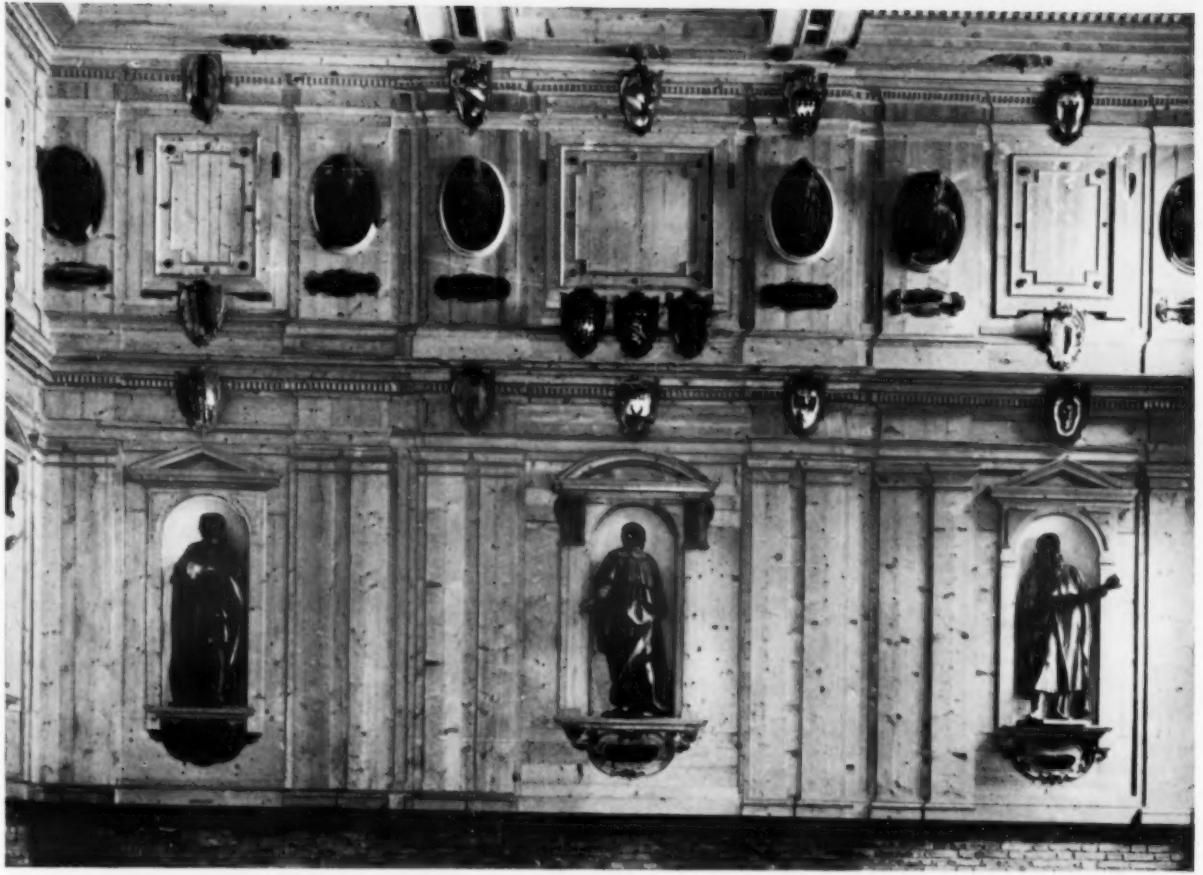

Fig. 4. Anatomical Theater. Actual state of restoration of the north wall.
(Courtesy Soprintendenza Monumenti, Bologna.)

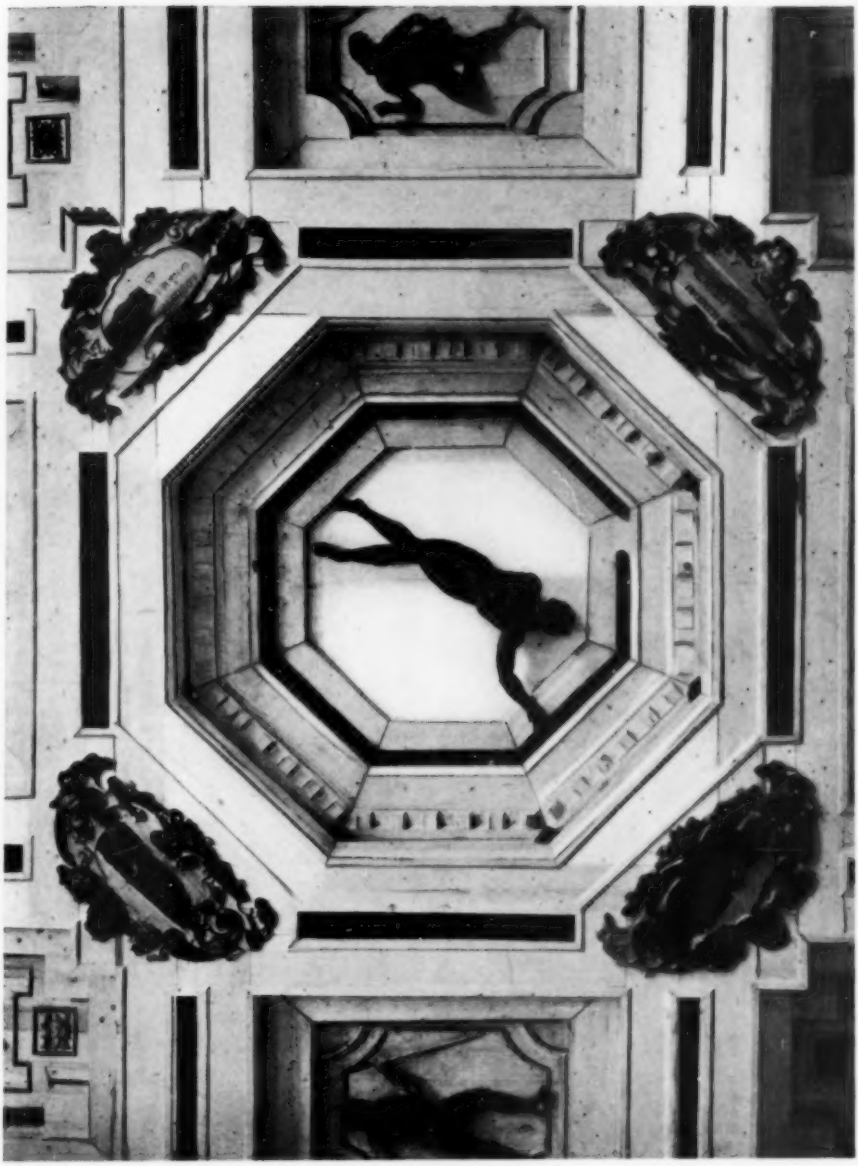

Fig. 5. Anatomical Theater. Central octagon of the ceiling, set provisionally in its original location. (Courtesy Soprintendenza Monumenti, Bologna.)

Fig. 6. Anatomical Theater. Wooden statue of Hippocrates after restoration. Still to be restored is the papyrus roll which the great physician was holding open between his hands. (Courtesy Soprintendenza Monumenti, Bologna.)

names of all those—groups or individuals—who contributed to the restoration of the historic monument. (Very probably the names will be engraved on some section of the wood which is clearly visible but is of secondary importance in relation to the original structure of the walls.)

This work of rebirth, specifically accomplished by the Italian Government, will always be signalized as the fruit of collective collaboration of scholars and specialists chosen for this purpose. Let me mention again the engineer Prof. Alfredo Barbacci, Superintendent of Monuments in Emilia, who was in Bologna on the day of the destruction. He promptly asked the Ministry for authorization to make arrangements without delay, and it was he who directed the work until 1952. His successor, Dr. Raffaello Niccoli, continues his supervisory work. Able and devoted assistance has been furnished throughout by the sculptors-in-wood Alfonso Bortolotti, Venanzio Baccilieri, and Astorre Astorri, members of the school of the Academician Prof. Ercole Drei, who also has gladly offered his own artistic advice with regard to the restoration.

A forthcoming pause in the arduous cycle of the work has now established a new point in the actual situation. Beginning in early September, and for several months thereafter, the hall of the Anatomical Theater, where about half the work of restoration is finished, will shelter an interesting collection of drawings by the Bolognese painters Agostino, Annibale, and Ludovico Carracci. The important exhibit of the paintings of these artists of the baroque school, brought together for the first time from every part of the globe, is now being set up in the Archiginnasio. The pause in reconstruction, as I have stated, which will result from this momentary cessation of work within the Theater itself, will show, in a way entirely opportune and independent of the treasures on display in the exhibit there, to what point the restoration has now advanced.

This hall, erected between the years 1638 and 1645-1649, and then subsequently enlarged and enriched in 1733-1734, will stand again as it originally was, fit to bring greater glory to the University of Bologna which had here its first real home. This construction, a marvel of its type, will once again be admired as it was in baroque times. We shall see it as the fosterer of its rebirth, Prof. Barbacci, described it:[4] "Rather than a sanctuary of science, the hall had the appearance of a theater, not only in the arrangement of the tiers which looked upon the dissecting table, not only in the posture of the statues, but also in the spectacular character which, in the seventeenth and even more in the eighteenth century, was a feature of anatomy lessons, when leading citizens, beginning with the Cardinal Legate, assembled in this magnificently decorated spot, and ladies displayed here the most gorgeous apparel."

VINCENZO GABELLI

[4] Alfredo Barbacci, "Il restauro del 'Teatro Anatomico' all'Archiginnasio di Bologna," *Bollettino d'Arte del Ministero della Pubblica Istruzione*, 1955, 3, published by the Libreria dello Stato.

Addendum

In 1668 Matteo Borboni and Lorenzo Tinti published a book containing the plans of the seventeenth-century theater. Proudly they wrote:

> Such is the magnificence of the anatomical theatre in the Archiginnasio, built by our fellow citizen, the well-known Antonio Levanti, foremost among architects, that its fame, spread by a hundred mouths, has filled the world . . . There have been not a few foreign students who regard this edifice as one of the most noble things in Bologna, a veritable miracle of art. . . .[5]

There is abundant evidence that these statements were true at the time, but how much more beautiful the theater became in the eighteenth century is also well attested, for in 1733-1734 nineteen *Rei Vectigalis Moderatores,* "having removed time's blemishes," restored the great theater and added fresh beauties to its decoration, including the magnificent écorchés of Ercole Lelli.

There is perhaps no other monument in Europe which combines in such splendour the glories of art with the memorials of science. Bologna, one of the temples of Minerva Medica, commands the veneration and respect of medical men in all parts of the world. How better can we signify our gratitude than by assisting the devoted labors of the band of artists and learned men who are removing war's blemishes and restoring the Teatro Anatomico to its former beauty?

Contributions for this good cause may be directed to Dr. John F. Fulton, Editor of this *Journal.*

LLOYD G. STEVENSON

Fracastoro on the Lagoons of Venice

On 30 November 1815 Gian Giacomo Trivulzio (1774-1831) of Milano, whose family name and one of whose chief interests are perpetuated in the great Biblioteca Trivulziana now in the Castello Sforzesco, visited the printing house of Alvisopoli. In celebration of the occasion there issued from that press, almost three hundred years after its composition, the *editio princeps* of Girolamo Fracastoro's letter to Luigi Cornaro on certain engineering projects for the conservation and healthfulness of the lagoons of Venice. Accompanied by a letter of commentary by the physician, mathematician, and hydraulic engineer Simone Stratico (1733-1824) which was written on 28 March 1814 and addressed to Daniele Francesconi (1761-1835), professor and librarian of the University of Padua, it provided one more instance of the universality of Fracastoro's genius. It is noticed by Fracastoro's devoted editor and biographer, General Francesco Pellegrini (*Fracastoro,* Studi e Memorie nel IV Centenario, a cura della rivista "Il

[5] Quoted by Harvey Cushing, "Ercole Lelli and His Écorché," *Proc. Charaka Cl.,* 1938, *9,* 9 (also *Yale J. Biol. Med.,* 1937, *9,* 199-213).

Fracastoro" degli Istituti Ospitalieri, Verona, 1954, p. 14), who dates it about 1549 and terms it little known.

That the printing house first established at Alvisopoli in 1810 and later transferred to Venice should have made this presentation to Trivulzio was entirely fitting. Both letters lay in manuscript in the library of Trivulzio in a copy of an edition of Fracastoro's poems published by Giuseppe Comino. They had, in fact, been transcribed there shortly before. It is accordingly gratifying to find listed on p. 161 of Giulio Porro's *Trivulziana. Catalogo dei cod. manoscritti* (Torino, 1884) just such a letter by Fracastoro on just such a subject. A similar entry occurs in Giovanni Benedetto Mittarelli, *Bibliotheca codicum manuscriptorum monasterii S. Michaelis Venetiarum prope Murianum* (Venice, 1779), col.399. Carlo Frati and Arnaldo Segarizzi, *Catalogo dei codici Marciani italiani,* vol. 2 (Modena, 1911) describe on pages 88, 158, 161, 163, and 165 five manuscripts of the letter, of the sixteenth and seventeenth centuries, which are preserved at the Marciana with material on the same subject by other authors. We know the letter little today, but it obviously had its importance in earlier centuries.

The Historical Library of the Yale University School of Medicine has recently received, through the kindness of Charles Donald O'Malley, a copy of the Alvisopoli publication. It consists of eight quarto leaves, in which pp. 6-15 (with the exception of 11) are so numbered. The title is *Lettera di Girolamo Fracastoro sulle lagune di Venezia, ora per la prima volta pubblicata ed illustrata.* The "Memoria addi 30 novembre 1815 Venezia" occurs on p. [3], Fracastoro's letter on pp. [5]-10, Stratico's letter on pp. [11]-15, and the imprint "Tipografia di Alvisopoli" immediately following Stratico's letter; pp. [2], [4], and [16] are blank. On p. 9 is a plan in illustration of Fracastoro's proposals.

But details of bibliography should not be permitted to hide the exciting content of this piece. There was very real danger that deposits of silt carried in by the tides might eventually render the Venetian lagoon a marsh and close it to navigation. Many private individuals and the Serenissima herself were deeply concerned. Cornaro, whose more enduring fame rests on his *Vita sobria,* was among those who conceived projects calculated to halt or retard the process. He requested from Fracastoro an expression of his opinion; this letter is Fracastoro's answer.

The William Harvey Tercentenary Celebrations—June, 1957

The Wellcome Foundation Film Unit is preparing a new version of the film made in 1928 for the Royal College of Physicians which showed the experiments and demonstrations described in the *De Motu Cordis* and other writings by Harvey. The script, drawings, and demonstrations of the earlier film were the work of a team headed by the late Sir Thomas Lewis and including Sir Henry Dale and Professor K. J. Franklin.

The new film is being made for the College under the surveillance of Sir Henry Dale, with the technical advice of Professor K. J. Franklin, Dr.

Donald A. McDonald, Dr. Michael de Burgh Daly, and Dr. L. Goodwin. The script, prepared by Miss Thora James of the Wellcome Film Unit, includes sequences indicating Harvey's association with the College, matter introduced by Sir Henry Dale to show the historical interest of the connection of Sir Thomas Lewis with the original film, and special photographic and animated diagram material expounding Harvey's experimental work and deductions in connection with the book. The great resources of the Royal College of Physicians and the Wellcome Historical Medical Library will be utilized as far as possible. Unlike its predecessor, the new film will be in color, and with sound; it will be distributed through loan or purchase on 16 mm. Kodachrome films to accredited persons or institutions at a cost to be announced. Enquiries should be addressed to Sir Russell Brain, President, The Royal College of Physicians, Pall Mall, London, S.W. 1.

J. F. F.

The Sarton Medal 1956

The second George Sarton Medal of the History of Science Society was conferred jointly upon Charles and Dorothea Singer at the International Congress of the History of Science at Florence on 1 September 1956 by Dr. I. Bernard Cohen representing the Committee on the Sarton Medal. Dr. Sarton himself received the first Medal which is awarded for contributions to the history of science.

The many contributions of the Singers are well known to readers of the *Journal,* who will rejoice in the Committee's choice.

The Schuman Medical Historical Essay Prize

The Committee on the Ida and Henry Schuman Historical Essay Prize (John F. Fulton, Chairman, Genevieve Miller, George Rosen) takes pleasure in announcing that Dr. Paul F. Cranefield of the Department of Physiology, College of Medicine at New York City, State University of New York, Brooklyn has won the prize of $250 in 1956 with his essay entitled "The Organic Physics of 1847 and the Biophysics of Today."

National Library of Medicine

On 1 October 1956, by Public Law 941, 84th Congress, the Armed Forces Medical Library was transferred to the Department of Health, Education, and Welfare and became the National Library of Medicine. The text of the act, passed by Congress and signed on 3 August by President Dwight D. Eisenhower, is printed in the *Armed Forces Medical Library News* 11, no. 9 (September, 1956). Dr. Howard McC. Snyder, the White House physician, presented the pen with which the bill was signed to Lt. Col. Frank B. Rogers, Director of the Library.

Historians of medicine will like to remember that the bill was introduced into the Senate by Senator Lister Hill of Alabama, whose father,

Dr. Luther Leonidas Hill, had worked with Lord Lister. The History of Medicine Division will remain for the present in Cleveland. Planning for a new building has been resumed, and for this particular purpose Mr. Robert W. Severance was appointed on 13 August Special Assistant to the Director.

American Association of the History of Medicine, 6-8 May 1957

The Thirtieth Annual Meeting of the American Association of the History of Medicine will be held in Richmond and Williamsburg, Virginia, on 6, 7, and 8 May 1957, in conjunction with the celebration of the 350th anniversary of the settlement of Jamestown. Those who wish to present papers are requested to communicate with the Chairman of the Program Committee, Dr. Genevieve Miller, Cleveland Medical Library Association, 11,000 Euclid Avenue, Cleveland 6. Ohio.

Symposia at the State University of New York

The State University of New York announces a series of Symposia to be held at the College of Medicine at New York City, 450 Clarkson Avenue, Brooklyn, New York during the coming academic year. These Symposia will deal with the historical development of physiological thought in the medical sciences.

The first Symposium will be held in November, 1956, and will consist of the following presentations:

13 November, 4:30 p.m., Dr. Owsei Temkin, The Dependence of Medicine upon Basic Scientific Thought; 8:00 p.m., Dr. Iago Galdston, Physiology and the Recurrent Problem of Vitalism.

14 November, 4:30 p.m., Dr. Lloyd G. Stevenson, The Structural Basis of Function and Anatomical Reasoning in Physiological Thought; 8 p.m., Dr. H. W. Magoun, Development of Ideas Relating the Brain with the Mind.

15 November, 4:30 p.m., Dr. Chauncey D. Leake, Development of Knowledge of the Cardiovascular System.

The Library of Lavoisier

On 7 March 1956 a number of items from the library of Antoine Laurent Lavoisier (1743-1794) were sold at auction in Paris. According to *The Times Literary Supplement* for 1 June 1956, p. 336, they included a run of *Almanachs royaux* from 1775 to 1790 which carry the arms of Lavoisier on their bindings and are seemingly the only volumes known on which his arms appear; a number of his school prizes and exercise books which went to the Musée Pédagogique; an autograph letter to his father-in-law, Paulze, which was acquired by the Conservatoire des Arts et Métiers; and other manuscript material which was pre-empted by the Académie des Sciences and the Archives Nationales. Two moving letters written from

prison to his wife were freely sold. Of special interest to the English-speaking world were two editions of English translations from his works (nos. 124 and 163 in the Duveen-Klickstein bibliography), published at London in 1776 and at Edinburgh in 1790. Further details of the sale are given by René Fric in *Archives internationales d'histoire des sciences 9*, no. 35, avril-juin 1956, pp. 189-191.

Professor René Leriche

On the eve of his death the French surgeon René Leriche (1879-1955) confided to the journal *Réalités* his thoughts on the merits and faults of modern surgery. They were printed in the issue of February, 1956, pp. 28-29 and 82-83. His more detailed memories appeared in a volume of 255 pages entitled *Souvenirs de ma vie morte* and published in 1956 in Paris, Editions du Seuil.

Sir Thomas Browne

The current interest in Sir Thomas Browne would have been gratifying to Sir William Osler. In addition to the examination of his botany by E. S. Merton in *Isis*, 1956, *47*, no. 148, 161-171, the following papers in publications not ordinarily seen by medical historians may be cited: Joan Bennett, "A note on *Religio medici* and some of its critics," *Studies in the Renaissance*, 1956, *3*, 175-184 and Frank L. Huntley, "Sir Thomas Browne: the relationship of *Urn burial* and *The garden of Cyrus*, *Studies in Philology*, 1956, *53*, 204-219.

Deutsche Vereinigung für Geschichte der Medizin

It is pleasant to read in the neat little *Nachrichtenblatt der Deutschen Vereinigung für Geschichte der Medizin, Naturwissenschaft und Technik e.V.* the carefully reported proceedings of that very active society. The editor for 1956 is Dr. Gunter Mann, Senckenberg-Anlage 27, Frankfurt; Nos. 6 (January) and 7 (May) have appeared to date. The annual meetings of the society are scheduled for 3-7 October 1956 at Aachen. Recent appointments in medical history include Dr. Robert Herrlinger as Diätendozent at the University of Würzburg and Dr. Gernot Rath as Privatdozent at the University of Bonn.

Dr. John Smith (1825-1910)

On the centenary of the first course of dental lectures in Scotland, Dr. J. Menzies Campbell of Glasgow delivered before the Royal College of Surgeons in Edinburgh on 31 May 1956 a commemorative address on Dr. John Smith. The pioneer lectures of Dr. Smith were the first important step in his efforts to gain enhanced prestige and status for the profession of dentistry. In 1860 he opened the Edinburgh Dental Dispensary. Queen Victoria honored him by making him her surgeon dentist in 1871.

Gift to the California Institute of Technology

Announcement was made in February of the gift, from a trustee who wishes to remain anonymous, of three hundred rare scientific books to the California Institute of Technology. Purchased in Florence from Dr. Giampaolo Rocco, who had assembled the books over a period of many years, the collection includes first editions of Galileo, Copernicus, and Kepler and combines with the Institute's already valuable holdings to make its library outstanding for the early history of astronomy. Other authors represented are Brahe, Cavalieri, Descartes, Gassendi, Hevelius, Kircher, Magini, and Scheiner. Any inquiries concerning the collection should be addressed to the Director of Libraries, California Institute of Technology, Pasadena 4, California.

Philadelphia, 1793

American Heritage for April, 1956, pages 54-57 and 99, carried an article by Dr. Laurence Farmer, "Moschetoes were uncommonly numerous," on the yellow fever epidemic of 1793 in Philadelphia. Dr. Farmer is a former Secretary-Treasurer of the Friends of the Rare Book Room of the Library of the New York Academy of Medicine and the editor of *Doctor's Legacy. A Selection of Physicians' Letters 1721-1954,* issued by Harper & Brothers in 1955.

Greek and Roman Medicine

Historians of ancient medicine will find stimulating and useful two articles in *Transactions of the American Philological Association,* 1955 (issued in August, 1956), *86.* On pages 51-62 Harold W. Miller discusses "*Technè* and discovery in *On ancient medicine.*" In his article "The education and training of slaves in antiquity" Clarence A. Forbes treats on pages 343-353 of slave physicians.

Proposed Museum of History and Technology

On June 13th President Eisenhower signed into law a bill providing funds for the construction on the Mall in Washington of a museum to be called the "Museum of History and Technology." This building, to be completed about 1960, will exhibit materials now housed in the Arts and Industries Building of the Smithsonian Institution. Included in the new museum will be Halls of Medical History, Dental History, and Pharmaceutical History.

The preliminary plans for the Hall of Medical History call for exhibits on the following subjects:

A. Cardiology (including bloodletting, electrocardiograph, stethoscope, sphygmomanometer, mechanical heart, etc.).

B. Surgery (including evolution of surgical instruments such as scalpel, amputation knife, saw, trepan, artery and dressing forceps, bullet extractors, tourniquets, etc., and a complete operating room of the 1800's).

C. Anesthesiology (ether inhalers, featuring original Morton ether inhaler).

D. Ophthalmology (including spectacles).

E. Neurology (including electroencephalogram).

F. Pediatrics (including infant nursing bottles).

G. Roentgenology (x-ray equipment).

H. Memorabilia of the pioneers of American medicine.

Mr. George Griffenhagen, Acting Curator of the Division of Medicine and Public Health of the Smithsonian Institution, would appreciate the assistance of readers of this *Journal* in making final plans for the Hall of Medical History. While suggestions and assistance in planning the actual exhibits will be helpful, he is particularly anxious to receive offers of donation of significant original equipment for possible inclusion in the historical exhibits. He would especially welcome information as to possible sources of fixtures for the pre-1900 operating room.

Communications should be directed to Mr. Griffenhagen at the Smithsonian Institution, Washington 25, D. C.

Medical History

The Editors of this Journal are most happy to welcome a new quarterly entitled *Medical History* which is to begin publication in January, 1957, under the editorship of Mr. W. J. Bishop, formerly Librarian of the Wellcome Historical Medical Library. The new journal describes itself as being "devoted to the history and bibliography of medicine and the related sciences" and is to be the official organ of the Cambridge University History of Medicine Society, the Scottish Society of the History of Medicine, the Osler Club of London, and the Norwegian Society for the History of Medicine. The annual subscription is £2.10.- a year ($7.50), and subscriptions and manuscripts should be sent to

The Editor, *Medical History*
c/o Wm. Dawson and Sons, Ltd.
4 Duke Street, Manchester Square
London, W. 1

Book Reviews

GALEN. *Galen on Anatomical Procedures.* Περι Ανατομικων Εγχειρησεων. *De anatomicis administrationibus.* Translation of the Surviving Books with Introduction and Notes by Charles Singer. London, New York, Toronto, published for the Wellcome Historical Medical Museum by Geoffrey Cumberlege, Oxford University Press, 1956. xxvi, 289 pp. $8.75 (37s. 6d.)

Reviewed by THOMAS R. FORBES, *Associate Professor of Anatomy, Yale University School of Medicine.*

THESE lectures, even now, have the briskness and interest which the skilled teacher imparts. Professor Singer believes that they were taken down in shorthand. As one reads this fine translation, it is easy to imagine Galen demonstrating before his class—brilliant, enthusiastic, vigorous, arrogant, caustic. Around the hard facts of gross anatomy are twined dozens of asides on function, on the ignorance of most surgeons, on the right way to dissect, on the right way to teach, on Nature who, "with her ready invention, never and nowhere fails in solicitude for the animal creation" (page 143), on the mistakes of others—"For I know that any diligent reader anxious to discover the truth will find the books of other writers crammed with errors" (page 107), and, of course, with Galen's far from humble opinions of his own talents. The words, even 1800 years later, hum with the vibrancy of a powerful personality.

Professor Singer not only translated with deliberation and care the first nine Books of the *De anatomicis administrationibus* but at the same time familiarized himself with the anatomy of the monkey and ape. This was necessary because what purports to be human anatomy is, as the translator points out in his excellent Introduction, essentially "a description of the soft parts of the ape imposed on the skeleton of man" (page xix). The modern names of anatomical structures are inserted in the text, and for further explanation there is appended a large number of anatomical drawings, chiefly from Hartman and Straus' excellent work, *The Anatomy of the Rhesus Monkey* (Baltimore, Williams & Wilkins, 1933). Numerous annotations provide discussions of Galen's ideas and frequent cross references to Aristotle, Hippocrates, and other classical authorities.

Galen's title fails to indicate that the lectures also contain a large amount of physiology. Directions are given for numerous experiments. His observations helped to form concepts of physiology that were to stand until the time of Harvey. One's enjoyment of keen physiological experimentation, however, is spoiled by the matter-of-fact directions for, and description of, animal vivisection, passages none the less ghastly because suffering is rationalized (page 192).

The organization of the nine Books is orderly, but to modern eyes the emphasis is uneven. Book I deals with the muscles and ligaments of the

upper extremity; Book II, with those of the lower extremity; Book III, with the vessels and nerves of the extremities; Book IV, with the muscles of head and neck; Book V, with the muscles of the trunk; Book VI, with the abdominal organs; Book VII, with the blood vessels and thoracic viscera; Book VIII, with experiments on the mechanics of respiration and on the function of the nervous system; Book IX, with the structure of the brain. A modern index is appended.

Professor Singer's scholarship is of the first order. His introduction, translation, and annotations make accessible and attractive a lecture series by one of the world's great anatomists.

PAUL DIEPGEN. *Geschichte der Medizin: Die Historische Entwicklung der Heilkunde und des Ärztlichen Lebens.* II. Band: 2. Hälfte. Berlin, Walter de Gruyter & Co., 1955. ix, 366 pp., illus. DM 34.

Reviewed by ILZA VEITH, *Assistant Professor of Medicine, Department of Medicine, University of Chicago, Chicago, Illinois.*

THIS book completes a two-volume history of medicine by one of the important German figures in medical history. Dr. Paul Diepgen, now in his seventy-eighth year and still active as Professor of the History of Medicine at the University of Mainz, won early renown with his studies on Arnold of Villanova, his history of German medicine, and particularly with his terse and concise five-volume history of medicine which appeared in a pocket edition (Sammlung Göschen) during the years 1913-1923. It is this last named series which formed a preliminary effort to Dr. Diepgen's most recent work. The first two volumes of this *Geschichte der Medizin* appeared in 1949 and in 1951, respectively, and dealt with the development of medicine from prehistoric days to the foundation of cellular pathology. The second part of volume two was published in 1955 and covers the period from 1858 to 1900; it also contains a very brief survey of the medical history of the last fifty years.

Although Dr. Diepgen directs himself primarily to the medical student and the practising physician, his book is of great interest to the medical historian as well. This is particularly true for the chapters dealing with the political and socio-cultural setting of the period, the relations of philosophy to the natural sciences, the relations of the exact sciences to the natural sciences, and the impact of technology on the theory and practice of medicine. Into this frame Dr. Diepgen fits his discussion of the biological foundations of medicine and of the new dimensions of pathological thought. This, then, leads him to a discussion of the practice of medicine and the rise of the specialties as they emerge from the vastly enriched diagnostic and therapeutic knowledge and methodology of the new scientific era.

It is clear that a text of three hundred pages cannot contain all the names and events that contributed to the development of twentieth century medicine. Yet, on the whole, few glaring omissions can be noticed, and it is

gratifying to find excellent chapters on subjects which do not, as a rule, find much discussion in medico-historical surveys. Among these are chapters on homeopathy, diet therapy, psychotherapy in psychosomatic diseases, psychiatry, dentistry, and forensic medicine.

On the basis of the reception of his previous volumes, Dr. Diepgen anticipates and defends the valid criticism of national emphasis. He feels that a greater emphasis on German names and achievements is justified by an implied natural right of each author to underline the achievements of his own compatriots, and he suggests that the reader can gain a fair picture by studying a composite of the writings of American, English, French, and Italian historians who seem to him guilty of a similar bias.

Dr. Diepgen's volumes are only scantily illustrated. They will be supplemented by a pictorial history of medicine which is to be published shortly.

KARL ABRAHAM. *Clinical Papers and Essays on Psycho-analysis.* New York, Basis Books, Inc., 1956. 336 pp. $6.00.

Reviewed by EUGENE L. BLISS, *Associate Professor of Psychiatry, University of Utah College of Medicine, Salt Lake City.*

KARL ABRAHAM died in 1925 at the untimely age of forty-eight, after only eighteen years of psychoanalytic labor. His intimate association with Sigmund Freud began in 1907 and from that time he continued to be a leading member of the small coterie that pioneered psychoanalysis. As the first psychoanalyst in Germany, he held the presidency of the German society from its inception in 1910 until his death. During these years he wrote four small books and over fifty papers ranging from one-page reports to monographs. It has been stated by his confreres and is confirmed by his writings that his work showed a rare degree of skepticism and critical honesty. He adhered closely to his clinical data, usually avoided remote speculations, and, *mirabile dictu,* wrote lucidly. Whether one accepts or disputes Abraham's position, there is never any difficulty understanding his communications.

A volume of his collected papers published in 1949 probably contains his most original contributions. This includes his writings about the pregenital stages of libidinal development and manic depressive states. The present volume, a companion to the first, contains a large number of his briefer papers as well as several of his lengthier essays. Scattered throughout are pungent observations that merit contemporary attention. As an example, he wrote that early sexual traumata "are not the cause of delusions and hallucinations, they merely give them their particular content."

The longer essays are remarkable for their ingenuity and scholarship. Abraham had a special interest in comparative linguistics and a considerable cultural resourcefulness. This rich background is evident in his lengthier efforts. In his essay entitled "Dreams and Myths" he documents

the many similarities between the two processes. Both, he argues, are creatures of human fantasy and so subject to the same general laws of wishfulment and identical distortions.

In his reconstruction from historical sources of the life of Amenhotep IV he attempts to document in terms of the king's oedipal strivings why monothesis was introduced into Egypt, albeit abortively, twenty-three centuries ago. Another essay deals with the painter Segantini whose early experiences, conflicts, and unconscious trends are analyzed to explain the nature of his artistic creations. Finally in "The History of an Imposter" he makes one of the first efforts to interpret criminality by detailed psychological reconstruction.

Although many of his explanations now seem "pat," at a time when books on psychiatry are glutting the market it is a pleasure to return to these basic contributions—not as biblical lore but as examples of the intelligent efforts of a gifted physician trying to explain some of the enigmas of the psyche.

AGATHA YOUNG. *Scalpel—Men Who Made Surgery.* New York, Random House Inc., 1956. 311 pp. $5.00.

Reviewed by GUSTAF E. LINDSKOG, *Professor of Surgery, Yale University School of Medicine.*

WRITING in a facile and popular style, the author presents those major developments which since the Renaissance have created surgery in its modern effective form. These developments are considered quadripartite; namely, the control of hemorrhage, the control of pain, the control of infection, and the prevention of shock. To elaborate on the evolution of each, the writer has used the device of concise biographies concerning selected figures in medical history.

For the beginnings of hemostasis the author's choice of Andreas Vesalius, Ambroise Paré, William Harvey, John Hunter, and Ephraim McDowell seems quite appropriate, and she has skillfully padded the skeleton of historical fact with animated and colorful details from the milieu in which the various characters lived and worked. Most of these vignettes are vivid and pleasing portrayals. To document the ability of a skillful writer like Miss Young in recreating her subjects, one need only compare her 18-page account of William Harvey with the considerably longer and more prosaic version of Robert Willis in the Sydenham Society collection of Harvey's works.

In the field of pain control or the development of anesthesia the writer skates rather nimbly on the thin ice of old controversy and comes off with an excellent summary and sympathetic portraits of two ill-fated principals, Horace Wells and William Morton. She forgoes, however, a splendid opportunity to describe the evolution of endotracheal (or positive pressure)

anesthesia, which plays such an important rôle in thoracic surgery and a not inconsiderable one in abdominal operations. This subject gets only a brief sentence or two in a late chapter.

The section on the control of infection includes, naturally enough, the life of Joseph Lord Lister, and also William Halsted and Harvey Cushing. The principal rôles of the latter two in the unfolding drama of surgery were not cast in this area, but it is admitted that on chronological grounds and in certain other respects they are sequential. The writer has skillfully used rich contemporary sources of material about Halsted and Cushing; in our opinion, the chapter on Harvey Cushing is a high point in the book. One wonders, however, why she has not given emphasis to Halsted's greatest and enduring contribution, that is, the introduction of the formal graduate or residency training program into America. While not dramatic, this must not be underrated as a factor in the progress of modern-day surgery and the decrease in mortality rates along with antibiotic control of infection, improved techniques in anesthesia, blood transfusion, and other methods designed to achieve homeostasis.

In the concluding chapters, entitled "The Revolution" and "Democritus' Well" the author largely abandons the biographical method, perhaps, because she begins to sense the limitations of space with a good deal remaining to be said. The reader is now offered a confusing medley of comments on such varied topics as the financing of medical education and research, gas gangrene, heart surgery, cross circulation, hypothermia, increased life expectancy, and the controversial theories of shock. In the discussion of heart surgery mention is not made of such pioneers as Blalock, Crafoord, or Potts.

The entire field of thoracic surgery, exclusive of the heart, escapes consideration in this interesting book. One line—"Thoracic surgery has brought new hope to patients with cancer ofthe lung"—does scant justice to pioneers like Alexander, Archibald, Brock, Churchill, and Graham who brought maturity to an infant specialty, fought in the winning fight against tuberculosis, adapted anatomical and physiological principles to the open chest, and effectively paved the way for a younger generation of cardiotomists whose achievements have been so dramatic.

WINFRED OVERHOLSER, Ed. *Centennial Papers Saint Elizabeths Hospital* (1855-1955). Washington, Centennial Commission Saint Elizabeth's Hospital, 1956. ix, 251 pp.

Reviewed by the EDITOR.

THIS volume will be most welcome to all who are interested in the history of medicine in this country and particularly to those who concern themselves with the evolution of our hospitals, military and civilian. The spirited superintendent, Winfred Overholser, begins with a prefatory note on the centennial in which due credit is given to the Honorable Oveta Culp Hobby, who as the Secretary of the Department of Health, Education and

Welfare encouraged the undertaking, and to the Executive Secretary, Mr. Samuel Botsford, who evidently did the hard work. Overholser's first chapter on the history of Saint Elizabeths Hospital is felicitous, and it sheds important light on the part played by the government of the United States in its endeavors to care for the mentally ill among its citizens. He tells of the Civic and Diplomatic Appropriation Act approved on 31 August 1852, "To enable the Secretary of the Interior, under the direction of the President of the United States, to purchase a site in the neighborhood of Washington, and for the erection, furnishing and fitting up of an asylum for the insane of the District of Columbia and for the Army and Navy of the United States, $100,000: provided that the whole expense of purchasing the site, and of erecting, furnishing and fitting up the building shall not exceed the sum herein appropriated."

Dr. Overholser tells also the story of Dorothea Lynde Dix, "the great defender of the rights of the mentally ill," whose efforts to secure appropriations for hospitals for the insane eventually led to the passage of a bill in 1854, first vetoed by President Franklin Pierce. The veto was eventually overruled, and a site for the proposed hospital in Washington was procured by the government for $27,000. The first building was started immediately and the first patient received on 15 January 1855; by March 12th of that year 51 patients had been admitted. Also in March a supplemental appropriation of some $34,000 was procured at the insistence of Miss Dix.

The first superintendent of Saint Elizabeths Hospital was Charles H. Nichols of the State of Maine who had served under Amariah Brigham at the Utica State Hospital. He was followed in 1877 by William W. Godding who served until his death in 1899. Behind the management of Saint Elizabeths and the work of the superintendents were the enlightened views of Miss Dix, who urged the creation of an atmosphere of friendliness and kindness as a means of reaching "the most humane care and most enlightened curative treatment" [of the mentally ill].

The history of psychiatry is one of the most neglected areas in the entire field of historical medicine, and one therefore welcomes this book which gives a highly creditable record of psychiatry in this country during the past hundred years. After Overholser's historical sketch, Nolan D. C. Lewis reviews the scientific contributions of Saint Elizabeths staff (1855-1955). To mention a few others of the eighteen chapters in the volume, Zigmond M. Lebensohn outlines medico-legal progress during the same period; Ramón Sarró makes claims for Spain as the cradle of psychiatry; Paul Daniel Sivadon discusses occupational therapy in France during the last hundred years; Robert H. Felix gives an historical account of the rôle of the federal government in mental health; and Honorio Delgado discusses Chlorpromazine and drug therapy in mental disease. The volume closes with Gregory Zilboorg's chapter which bears the title "The unwritten history of an inspiration."

DOO JONG KIM. *History of Medicine of Korea.* (韓國醫學史) Seoul, Korea, 314 pp. illus.

Reviewed by ILZA VIETH, *Assistant Professor of the History of Medicine, Department of Medicine, The University of Chicago, Chicago, Illinois.*

THIS book represents the first effort at a survey of the history of Korean medicine from its very beginnings to modern times. It is written in Korean with a substantial admixture of Chinese, and the reviewer was aided in the comprehension of the Korean parts of the text by the author's brief outline of the first part of the book. Thus, this review cannot do more than give a short résumé of the book's contents—a critical discussion must be postponed until the volume becomes available in translation.

It appears that except for the earliest days Korean medicine proper hardly existed at all. The medical history of Korea is a direct reflection of its political and cultural history. In consequence it was particularly the Chinese medical system that was adopted, almost without perceptible change, in the first centuries of our era, and which has continued to be practised until the most recent times. Added to the Chinese medical practices were those of India which reached Korea together with the Buddhist religion. To this Sino-Indian amalgamation was added in the 8th century A.D. a strong admixture of Arabian medicine, largely in the form of drug therapy. From then on until the introduction of Western medical practices, Korean medicine continued to be based in varying degrees on Chinese, Arabian, and Indian precepts, with those of China predominating, even to the extent where Chinese medical books were adopted and often translated into Korean.

It is interesting that Korea was not only the recipient of the medical culture of other nations, but that it served also to transmit medical information to Japan as early as the beginning of the 5th century A.D. Korea's transmission of Chinese medical culture into Japan continued well into the 8th century, and it was only then that the Japanese turned directly to China for more detailed information.

While few, if any, of the Korean medical writings are free from foreign admixtures and while Chinese, Indian, and Arabic elements can be detected in all works on the subject, Korean medicine has not yet developed its own particular flavor by the harmonious blending of these various foreign systems.

It is hoped that Dr. Doo Jong Kim, Professor of the History of Medicine at the College of Medicine of the Seoul National University, will use some of the time he is now spending in this country to furnish us with an English translation of his important work.

NOTES ON CONTRIBUTORS

GABELLI, Dr. VINCENZO, was formerly Chief Architect for Public Works in Libya. His address is Via Tagliapietre 23 (Chiesa della Santa), Bologna, Italy.

HILBERRY, CONRAD, Ph.D., is Assistant Professor of English, DePauw University, Greencastle, Indiana.

LLOYD, Miss O. M., B.A., A.L.A., is a cataloguing assistant in the Library of the Royal College of Physicians, Pall Mall East, London S.W. 1, England.

POYNTER, F. N. L., Ph.D., F.L.A., is Librarian, The Wellcome Historical Medical Library, 183, Euston Road, London N.W. 1, England.

TODD, A. C., B.A., is Resident Tutor in West Cornwall, University College of the South West of England. His address is 9, Morrab Terrace, Penzance.

WALTER, RICHARD D., M.D., is Instructor in Medicine (Neurology) and Assistant Director of the Electroencephalographic Laboratory, University of California Medical Center, Los Angeles 24, California.

Index

Aaron, 177
Abel, 184
Abi Osbaia, 178
Abraham, Karl, 453-4
Achillini, 441
A'Court, 304
Adelard *of Bath*, 175
Ademollo, Agostino, 187, 191
Aesculapius, 227
Aëtius, 227
Agostino, 443
Aiken, P., 357
Akhnaton, 67
Alabama Medical Institute, 140
Albert, Leandro, 33
Alberti, 40, 41
Albertotti, Giuseppe, 16-18, 20, 23, 25-7, 29, 30, 32-3, 35, 37, 44, 46, 182, 184-5, 187, 192, 194-6, 202-05, 209, 212-17
Albom, J. J., 122-3
Albucasis, 169, 177, 180, 181
Aldrovandi, 441
Alexander, *Trallianus*, 174
Alexander I, *Czar*, 54
Alexander II, *Czar*, 350
Alexander, John, 455
Alexander, M., 356
Alexandrinus, J., 345, 346
Allbutt, *Sir* Clifford, 232-3, 355
Allison, R. S., 12
Alonso de Florida, F., 237-8
Alpagus, Andreas, 176
Alpinus, M. T., 345, 346
Alsaharavius, 181
Amati, Giacinto, 27, 40
Americo *of Piacenza*, 42
Ancisa, P. A. dell', 186
Anderson, B. G., 221-4, 244
Anderson, Isabelle, 368
Andreini, Guido, 13, 14, 19, 195, 199
Andrew, Llewelyn, 16, 196
Andry, Nicholas, 430, 431
Annan, Gertrude L., 354, 368
Annibale, 443
Apicius, 345, 346
Apollo, 227
Appelby, *Dr.*, 10
Apponesi, 441
Aranzio, 441
Archer, John, 227
Archibald, E. W., 455
Archigenes, 365
Arderne, John, 169
Argelata, 441
Argentiero, G., 346
Aring, C. D., 111
Aristotle, 203, 398, 400, 401, 402, 408, 451
Armati, Armato degli, 184, 188-91
Armati, Bartolo degli, 187-9, 190, 205
Armati, Feduccio degli, 187-8
Armati, Jacopo degli, 187, 190
Armati, Lopa degli, 187
Armati, Mazzocchio degli, 187-8, 191
Armati, Parente degli, 187-90
Armati, Salvi degli, 187-8, 191
Armati, Salvino degli, 19, 183-93, 195-7, 202, 205, 217
Armati, Vanni degli, 187
Armstrong, C. W., 429
Armstrong, William, 151, 154
Arnold *of Villanova*, 168, 169, 170, 175, 202, 203, 452
Asclepias, 169
Astell, Jeremiah, 375
Astorri, Astorre, 443
Atkins, Henry, 412
Aub, J. C., 237
Auenbrugger, Leopold, 63
Auer, Erich, 119
Avenzoar, 177, 181
Averroes, 174, 177, 227
Avicenna, 169, 171, 173, 174, 177, 181, 182, 227, 262, 353, 358

Bacci, Orazio, 42
Baccilieri, 441
Baccilieri, Vananzio, 443
Bacon, *Lord*, 283
Bacon, Francis, 404, 410
Bacon, Roger, 30, 197-8, 206, 208-9, 213-4
Badham, Charles, 54-65
Badham, David, 54, 59
Badham, John, 59
Baglivi, Giorgio, 279, 282
Bailey, Esther S., 439
Baillet, Adrien, 220
Baker, Benson, 336
Baldinucci, Filippo, 38
Baldovinetti, Giovanni, 197
Ballard, J. F., 157, 339-41, 357
Ballet, Gilbert, 424, 429
Bamberger, 347
Bamberger, Louis, 439
Banister, John, 419
Bankston, Lanier, 139
Banting, *Sir* F. G., 297
Barbacci, Alfredo, 440, 443
Barck, Carl, 16, 39, 193, 214
Barduzzi, Domenico, 19, 22, 26, 183, 187, 195, 200
Barker, R., 375
Barlow, *Sir* Thomas, 342, 343
Barnett, T. W., 303, 306
Barney, Ruth, 120-1
Barrois, 28
Barsotti, Ricardo, 210
Bartholin, 282
Bartholin, Thomas, 225, 384, 394, 408
Bartoletti, 441
Bartolomeo, 40
Batt, 315
Batterby, W. S., 53
Battie, William, 102-3
Bauer, Julius, 428, 429
Bauer, Louis, 438
Baverio, 441
Bayliss, 288
Beau, 284

Beckman, L., 29, 38
Beddoes, Thomas, 430-8
Bell, W. J., 113-14
Belloni, Luigi, 342
Bellonius, 283
Belt, Elmer, 122
Bembo, Pietro, 234
Bender, M. B., 48, 53
Bennett, Joan, 448
Benton, A. L., 47-53, 125
Berg, J., 359
Berger, H., 362
Berman, Alex, 133-55, 244
Berthier, J.-J., 205
Bertram, *Earl of Ashburnham*, 28
Bertuccio, 441
Bertz, E., 349
Berzelius, 220, 221
Besta, Enrico, 211
Bigelow, Jacob, 109
Biggs, Noah, 378, 381, 382, 392, 397, 398, 399, 400, 401, 403, 404, 405, 406, 407
Billings, J. S., 219
Biscioni, A. M., 31-4, 44-5, 186, 211
Bittel, Karl, 275, 281
Bixler, Elizabeth S., 238-40
Blalock, Alfred, 455
Blancard, Stephan, 401
Bleuler, Eugen, 362, 427, 429
Bliss, E. L., 453-4
Blumer, George, 239-40
Boccaccio, Giovanni, 39, 45, 188
Bock, Emil, 16, 25, 29, 39, 43, 184, 193, 198, 207, 208
Bodham, 55
Boerhaave, Hermann, 359
Boldero, *Sir* Harold, 421
Bologna, Giovanni, 184
Bologna University. Anatomical Theatre, 440-3
Bonaini, Francesco, 14, 23, 40, 46, 209-10
Boone, Nicholas, 158
Borboni, Matteo, 444
Borrichius, Olaus, 366
Bortolotti, Alfonso, 443
Bosatra, Andra, 342
Botanico-Medical College of Memphis, 140
Botkin, B. A., 350
Botsford, Samuel, 456
Boucly, 27
Bouhoeffer, 362
Bourgeois, Alexandre, 25, 46, 190, 197-8, 216
Bowle, George, 379, 384, 395, 410
Boyle, Robert, 90, 103-4, 127-9, 131, 227-8, 351-2, 360
Boylston, Zabdiel, 109
Bradley, Richard, 105
Bradshaw, Henry, 236
Brahe, Tycho, 449
Brain, *Sir* Russell, 446
Brand, Henning, 218
Brenz, J., 345
Breucke, 254
Breuer, 249
Brian, Tho., 378
Brigham, Amariah, 456
Brigham, E. H., 339
Brill, A. A., 119
Brisebarre, Jean, 208
Brobeck, J. R., 111
Brock, R. C., 455
Brodie, *Sir* Benjamin, 307, 318
Broglie, L. de, 369
Bronson, 80
Brouncker, *Sir* William, 416
Brown, G. H., 232
Brown, J. A., 151
Browne, E. G., 182
Browne, Elizabeth, 343
Browne, Lancelot, 343
Browne, *Sir* Thomas, 378, 384, 395, 396, 406, 407, 409-10, 448
Bruno, Vincenzo, 217
Bruns, L., 52, 53
Buchanan, Andrew, 61, 62
Buchanan, M. S., 65
Bucke, R. M., 349
Budd, William, 117
Buffon, G.-L. L., *Comte de*, 424
Burke, R. M., 123
Burman, Pieter, 25
Burr, H. S., 122
Burton, Robert, 399, 400, 406
Burton, William, 151
Bury, J. B., 403
Bury, Richard de, 226
Butler, Francelia, 237
Butler, N. M., 426
Butler, William, 404
Butterfield, L. H., 113, 355
Butts, *Sir* William, 419

Cademan, *Sir* Thomas, 416
Caelius Aurelianus, 406
Caesemaeker, F. E. de, 43, 197-9, 209
Caius, John, 167, 174
California Institute of Technology, 449
Calmette, 364
Calogerà, Angelo, 19
Camenicenus, Jacobus, 109
Campbell, D., 171, 172, 176, 177, 182
Campbell, J. Menzies, 124, 448
Cancellieri, Francesco, 20, 38
Canovai, Stanislao, 20, 22-4, 35, 187, 192-3, 196, 209, 218
Cantini, Lorenzo, 187, 192
Carbonelli, Giovanni, 184, 196
Cardano, Girolamo, 217
Cardani, 441
Cardosi, Pietro, 26, 41
Carlisle, 433, 434
Carlson, A. J., 289
Carmichael, Leonard, 108
Carpenter, *Dr.*, 248
Carracci, Ludovico, 443
Carruthers, R. H., 226
Cascia, S. F. da, 40
Cascina, Francesco da, 40
Cascina, Giovanni da, 40
Cascina, Guglielmo da, 40
Cascina, Marino da, 40
Cascina, Niccolò da, 40

Cascina, Pietro da, 40
Cascina, R. S. da, 40
Cascina, Simone da, 20, 40
Cascina, Tommaso da, 40
Cavalcanti, Andrea, 189
Cavalieri, 449
Caverni, Raffaello, 40, 183, 193, 199
Cecchetti, Bartolomeo, 184, 213, 216-17
Ceely, 307, 312, 315
Celius, Paulus, 174
Celsius, Hans, 221
Celsus, 174
Cerletti, U., 230
Chadwick, J. R., 339
Chadwick, Edwin, 299
Chalfant, Robinson, 429
Chambre, John, 419
Channing, John, 179, 180
Channing, Walter, 109
Chantilly, Girod de, *see* Palmer, G.
Charcot, J. M., 247, 249, 250, 255, 362
Charles I, 379
Charles I, *of Anjou*, 169, 171
Charles II, 375
Charleton, Walter, 379, 398, 409, 418, 421
Charlton, Margaret, 367
Chaucer, Geoffrey, 357, 358
Cheselden, William, 101
Chevalier, Arthur, 196
Chevalier, Charles, 184, 201, 203
Childe, V. G., 218
Chiribide, 217
Choulant, Ludwig, 273
Churchill, E. D., 455
Cinelli, Giovanni, 41, 191
Cirincione, Giuseppe, 17, 185, 192, 209
Clagett, Marshall, 115-16
Clapesattle, Helen, 120
Clement, John, 357
Clendening, Logan, *Lecture*, 230, 239
Cleveland, John, 398, 401
Cline, Henry, 436
Clowes, William, 347, 419
Cohen, I. B., 446
Cohen, L. A., 127-32, 244
Cohn, Hermann, 29, 38
Coiter, Volcher, 261
Colardeau, C.-P., 87, 88, 92, 93, 95, 96
Colby, C. C., 357
Cole, Rufus, 184
Coletti, Luigi, 205
Colin, G., 177
Collardeau, *see* Colardeau
Collins, Samuel, 227-8
Collip, 297
Collop, John, 373-411
Comino, Giuseppe, 445
Company of Distillers, 415-16, 421
Company of Grocers, 412, 418-19
Company of Stationers, 416-18
Constantine Africanus, 166, 169
Cook, *Captain* James, 11, 12
Cook, W. H., 136, 138, 146, 147, 148, 150
Cooke, Thomas, 149
Cooper, *Sir* Astley, 300, 314
Cope, *Sir* Zachary, 101
Copho *of Salerno*, 169
Copland, R., 401
Coppola, E. D., 356
Cornaro, Luigi, 444, 445
Corvisart, J. N., 64
Coutts, J. A., 59, 65
Cowen, D. L., 156-65, 244
Cowley, A., 379
Cowper, William, 341
Crafoord, Clarence, 455
Cranefield, Paul, 446
Crashaw, Richard, 376
Crescimbeni, G. M., 196
Crichton, Alexander, 54, 252
Critchley, Macdonald, 53, 242
Crofton, W. M., 289, 298
Crombie, A. C., 215
Cromwell, O., 375
Crooke, Helkiah, 417
Crowe, Mildred, R., 368
Cullen, William, 1
Culpeper, Nicholas, 156-65
Cummer, C. L., 357
Cunier, Florent, 198
Cunningham, Eileen R., 368
Curtis, Alva, 134, 135, 137, 138, 139, 151
Cushing, Harvey, 109, 156, 261, 264, 274, 359, 360, 362, 444, 455
Cutler, *Sir* John, 418
Cuvier, Georges, 220

Dabbs, John, 375
Dalton, John, 87, 88, 90
Dale, *Sir* Henry, 445, 446
Daly, M. de B., 446
D'Amico, Diego, 187, 195, 199, 209
Dance, George, 101
D'Ancona, Alessandro, 42
Dante, 196, 208
Darwin, Charles, 256, 424
Darwin, Emma, 438
Darwin, Erasmus, 424
Dati, C. R., 13-26, 28, 34-6, 39-42, 46, 186, 193-5, 199-201, 203, 217
Daumas, 370
Davidsohn, Robert, 29-30, 32, 34, 37, 43, 185, 204, 215
Davis, D. J., *Lecture*, 231
Davis, J. I., 225
Davy, *Sir* Humphry, 432
De Bartholomaeis, Vincenzo, 34
DeBellis, Hannibal, 355
Del Beccuto, 197
Delgado, Honorio, 456
Del Guerra, Giorgio, 20-1, 23, 35, 42, 183, 192, 199, 200
Delisle, Léopold, 27-8
Del Lungo, Isidoro, 20, 26, 37, 40, 46, 189-92, 196-7, 199-200, 209-10
Del Migliore, F. L. del, 183-96, 198-9, 205
Descartes, René, 201, 220-1, 448
Deusing *of Groningen*, 175, 176
De Waard, Cornelis, 15, 43
Dibner, Bern, 115-16
Dickens, Charles, 331, 352
Diemerbroeck, 283

Diepgen, Paul, 452-3
Dietrich, 206
Digges, Leonard, 403
Digby, *Sir* Kenelm, 410
Diogenes Laertius, 407
Dix, Dorothea, 456
Dioscorides, 164, 174, 227
Dodds, *Sir* E. C., 232, 421
Doe, Janet, 354, 367-9
Dohrn, M., 298
Dondaine, Antoine, 201
Dondale, Marion, 367
Donne, John, 376, 377, 397, 405, 408
Draper, A. C., 151
Drei, Ercole, 443
Dreyfus, Alfred, 350
Drinkwater, John, 373, 375, 377, 378, 383
Dryander, Johann, 262, 263, 264, 269, 273
Dryden, John, 379, 409
Duclaux, P. É., 363
Duffield, Pitts, 12
Dumas, J.-B., 369
Duncan, Alexander, 60, 61, 65
Dunlop, D. M., 166-82, 244
Duran-Reynals, Francisco, 363
Duvall, Florence, 367
Duveen, D. I., 369-71, 448

Earle, John, 401
Eastman, N. J., 364
Echard, Jacques, 205
Edelstein, Ludwig, 364
Edward II, *King*, 427, 429
Edward VI, *King*, 174
Edward *The Confessor*, 168
Edwards, S. A., 344
Ehrle, Franz, 198
Eisenhower, D. D., 446, 449
Elgood, Cyril, 182
Eliot, George, 233
Elizabeth I, *Queen*, 174, 417, 418, 419
Elmes, James, 418
Elyot, *Sir Thomas*, 167, 173, 174, 399
Emery, R. W., 358
Ent, George, 374, 378, 382, 383, 384, 394, 409
Erb, W. H., 362
Eschmann, Jean, 227
Estienne, Charles, 264
Eusebius, 217
Eustachius, Bartholomaeus, 225, 261
Evans, A. P., 358
Evington, Anne, 385
Ezekiel, 284

Fabricius *ab Aquapendente*, H., 342
Fabricius, J. A., 210
Fabroni, Angelo, 15
Fair, Eleanor, 368
Falconieri, Ottavio, 25
Falconieri, Paolo, 25
Fallopius, G., 261
Falloux, de, 27
Falta, W., 294, 298
Faraj b. Sālim, 169, 171, 172
Farmer, H. G., 181
Farmer, Laurence, 449
Farr, William, 303, 304, 305, 307, 311, 314, 338
Fechner, 254
Feinberg, C. E., 348
Feldhaus, F. M., 26, 29, 34, 184, 208-9
Feldman, D. S., 53
Felix, R. H., 456
Ferrier, W. J., 156
Ferrua, A., 354
Feyrabend, S., 345
Fidati, Simone, 40
Fields, Wm., 154
Fineschi, Vincenzio, 42, 189-90
Finlayson, J., 54, 62, 63, 65
Fisch, M. H., 219, 261
Flechsig, P. E., 117-18
Fleet, John, 109
Fleming, Alexander, 233
Fletcher, *Sir* W. M., 233
Fletcher, Robert, 220
Flexner, Abraham, 439
Floyer, *Sir* John, 282
Flycht, 221
Foerster, Otfrid, 362
Fonerden, W. H., 148, 149
Foney, John, 154
Fontani, Francesco, 18, 26
Foot, Jessé, 101, 102
Forbes, C. A., 449
Forbes, T. R., 451-2
Forschbach, J., 288, 297, 298
Fowler, 317
Fox, L. W., 36-7, 43
Fracassati, 441, 442
Fracastorio, Girolamo, 108, 233-5, 444-5
Francesconi, Daniele, 444
Francis, W. W., 348
Frank, P., 55
Franklin, Benjamin, 84
Franklin, K. J., 342, 445
Fraser, J. E., 121
Frati, Carlo, 445
Fraunce, 400
Freer, Robert, 58
Freind, John, 169, 175, 176, 178, 179, 181, 182
French, John, 416, 421
Freud, Anna, 119
Freud, Sigmund, 118-19, 236-7, 247-60, 360-1, 362, 453
Fric, René, 369-70
Friedman, Reuben, 122-3
Fromondus, Libertus, 201
Fuchs, Leonhard, 344-6
Fuld, Mrs., 439
Fulton, J. F., 103-10, 123-4, 132, 224-5, 227-8, 229, 235-6, 237, 261, 340, 341-2, 351-2, 353, 355, 359-60, 362, 367-9, 373, 439, 444, 445-6, 455-6
Furmanski, A. R., 53

Gabelli, Vincenzo, 440-3, 458
Gagnier, John, 178, 180, 181
Gaius, 211
Galdston, Iago, 447

Galen, 159, 162, 164, 169, 173, 174, 227, 230, 262, 281, 282, 283, 360, 365, 393, 395, 399, 406, 408, 410, 424, 441, 451-2
Galletti, Alfredo, 26, 30-1, 40, 42
Galilei, Galileo, 21, 24–25, 27, 30, 37, 45, 207
Gallo, Alfonso, 227
Galvani, Luigi, 235
Gamba, Bartolomeo, 42
Garrett, *Dr.*, 317, 324
Garrison, F. H., 29, 156, 157, 158, 164, 202-3, 208, 212, 219, 264, 274, 366
Garth, *Sir* Samuel, 414, 418, 421
Garzonio, 441
Gassendi, 448
Gentilly, Giros von, *see* Palmer, G.
George, *King of Podebrady*, 109
Gerard *of Cremona*, 169
Gerland, Ernst, 19
Gersdorff, Hans von, 262, 273
Gheduzzi, G., 229
Gibbs, C. B. F., 298
Giberti, G. M., 234
Gifford, *Dr.*, 57
Gilbert, *Dr.*, 317, 329
Gilbert, Davies, 431, 432
Gilbertus *Anglicus*, 169
Gimma, Giacinto, 38
Girod, Amury, *see* Palmer, G.
Giudice, G. del, 171
Glisson, Francis, 378, 381, 384, 390, 403
Godding, W. W., 456
Goiffon, J.-B., 105
Golesceano, Constantin, 15, 29
Goltz, F. L., 52
Goodwin, John, 160
Goodwin, L., 446
Gordon, Bernard, 201-3
Gordon, B. L., 15-16, 25, 30, 37, 192-3, 202, 214
Goulder, Grace, 357
Graham, E. A., 455
Granchi, 42
Granjel, L. S., 355
Greeff, R., 14-18, 20, 28-9, 35-6, 38, 40, 43, 46, 184-5, 187, 193-4, 196, 199, 201, 205, 209, 211-14, 216-17
Green, *Dr.*, 327
Green, J. P., 372
Green, R. M., 235
Greenfield, J. G., 107, 242
Greenhill, W. A., 182
Greenleaf, Elizabeth, 165
Greenleaf, Grace, 165
Gregg, Alan, 439
Griesinger, Wilhelm, 362
Griffenhagen, George, 450
Griffin, R., 317, 323, 326, 329, 333, 334, 337
Grimaux, 370
Grinnel, Mary E., 368
Grmek, M. D., 240-2
Groedal, F. M., 355
Grosseteste, 30
Grote, F., 294, 298
Grotius, Hugo, 377
Guasti, Cesare, 18
Gudden, B. A. von, 362
Gültingen, A. von, 345
Guerlac, H. E., 370
Guetard, 370
Guillaumat, L., 47, 53
Guiteau, C. J., 424
Gull, *Sir* William, 258
Guthrie, Douglas, 238-40, 353
Guthrie, G. J., 304, 312, 315
Guttmacher, A. F., 364
Guy de Chauliac, 203-4, 208, 213
Gwaltney, Corbin, 442
Gwinne, Matthew, 343

Hadrian, 365
Haegar, 221
Hagen, F. H. von der, 207
Hain, 359
Haitham, Ibn al-, 30
Halford, *Sir* Henry, 58, 62
Hallam, Bertha B., 367
Hallauer, Otto, 30, 196, 205
Haller, A. von, 102, 225, 346
Halliburton, 233
Halsted, W. H., 455
Haly Abbas, 174, 176, 177, 181
Haly, Jesu, 172
Hamilton, Alexander, 222-4
Hamilton, William, 222
Hammond, W., 301
Handerson, H. E., 357
Hanstrom, 220
Harms, Ernest, 230
Harris, *the shoemaker*, 66-8, 72, 82, 83, 88, 92, 93, 95
Harris, J., 404
Hartman, C. G., 451
Harvey, William, 175, 259, 260, 340, 341-3, 359-60, 374-83, 384, 388, 393-4, 397-9, 401-02, 407-10, 413, 451, 454
Hawkins, *Sir* Richard, 8, 12
Haym, N. F., 183, 186
Hazlitt, W., 345
Head, 304
Healy, William, 429
Hebenstreit, J. E., 228
Heberden, William, 1
Hector *Anglicus*, 169
Heister, Lorenz, 359
Hell, Maximilian, 285
Heller, August, 16, 183, 190
Hellman, C. Doris, 229
Helmholtz, H. L. F. von, 67-75, 77-8, 81-2, 88-92, 94-5, 254
Helmont, J. B. van, 282, 378, 384, 392, 393, 397, 406, 407-08, 411
Henry VIII, *King*, 415, 419
Henry *of Ghent*, 197-8
Henry *The Englishman*, 169-70
Herbart, J. F., 248
Herbert, Arthur, 1-12, 125
Herbert, George, 376
Herford, 400, 405
Hermann, Jean, 226
Herrlinger, Robert, 448
Hevelius, 449

Heymann, *Mme.* Alfred, 16, 41, 184, 195, 200, 202
Hilberry, Conrad, 384-411, 458
Hill, Emory, 190
Hill, L. L., 447
Hill, Lister, 446
Hine, R. L., 384
Hippocrates, 61, 159, 162, 169, 174, 227, 238, 284, 353, 360, 399, 406, 441, 451
Hirsch, August, 43, 345
Hirsch, William, 426
Hirschberg, Julius, 15, 16, 37, 203, 206, 209
Hirst, L. F., 114-15
Hitzig, E., 52
Hobbes, 410
Hobby, Oveta Culp, 455
Hodgkin, Thomas, 301, 313, 333
Hodgkinson, Ruth G., 299-338, 372
Hoff, H. E., 110
Hoffman, Friedrich, *Jr.*, 359
Hofmann, Caspar, 260
Hollemback, Henry, 154
Holmes, O. W., 109
Hooke, Thomas, 128, 129
Hooker, Worthington, 133, 134
Hoppe, Edmund, 16
Horace, 277
Horner, J. F. H., 29, 38, 207
Horwood, A. J., 160
Howard, Horton, 134
Howkins, Thomas, 157
Howman, *Rev.*, 317
Huddart, Joseph, 66, 67, 72, 83, 84, 90
Hudson, A. E. A., 1-12, 125
Hübner, Walther, 190
Hugh *of St. Cher*, 205
Hughes, M. Y., 384
Humboldt, Alexander von, 206
Humelberger, Gabriel, 345, 346
Hunger, Wolfgang, 346
Hunt, Thomas, 180
Hunter, Andrew, 293
Hunter, John, 101, 124, 430, 436, 454
Hunter, R. A., 102-3, 117-18
Hunter, William, 101, 178, 181
Huntley, F. L., 448
Huter, Simon, 345
Hyrtl, Joseph, 104-5

Ibn Jazlah, 172
Ibsen, Henrik, 426
Ilberg, Johannes, 365
Imhotep, 353
Irnerio, 441
Irving, *Dr.*, 11
Isjonval, D.-B. Quatremère d', 78, 83, 84, 88, 89
Izquierdo, J. J., 237-8

Jackson, C. T., 109
Jackson, Edward, 218
Jackson, Hughlings, 249, 256, 362
Jacob, P. L., *see* Lacroix, Paul
Jacobi, Jolande, 404
Jallabert, L. J., 230
James I, *King*, 160
James, Thora, 446
Jarcho, Saul, 350, 372
Jefferson, Thomas, 113
Jeffries, John, 109
Joannitius, 172, 174
John *of Gaddesden*, 169
Johnson, F. R., 405
Johnson, Samuel, 63, 80, 82, 83, 85, 89, 93, 101, 352
Jones, Ernest, 236-7, 247, 255, 360-1
Jones, John, 399
Jones, M. Irene, 368
Jones, R. F., 403
Jones, *Sir* Robert, 438
Jonson, Ben, 405
Jordan, Mildred, 367
Josephus, 408
Jospers, Karl, 362
Joubert, Laurent, 203
Juhn, *Dr.*, 106
Jung, C. G., 362

Kaeppeli, Thomas, 33
Kästner, A. G., 43
Kalm, Peter, 223
Keate, Robert, 304
Keevil, J. J., 232
Keith, *Sir* Arthur, 431
Kellaway, Peter, 229-30
Kepler, Johannes, 259, 278
Kerney, Ellen, 367
Kerckring, 282
Keys, T. E., 358
Khairallah, A. A., 177
Kilgour, F. G., 111, 124, 235
Kim, D. J., 457
King, *Dr.*, 315
Kingsley, Charles, 317, 324
Kipling, Rudyard, 156
Kircher, Athanasius, 449
Kisch, Bruno, 97-100, 125
Klebs, A. C., 359
Kleiner, I. S., 293, 298
Klickstein, H. S., 448
Knight, *Capt.* John, 12
Knowlton, F. R., 289, 290, 298
König, 370
König, Arthur, 69-70, 73-5, 80, 86, 91
Kolle, Kurt, 362
Kraepelin, Emil, 362
Kramer, Benjamin, 288-98, 372
Krebs, Engelbert, 206
Kremers, E., 158
Krey, A. C., 358
Kries, F., 70
Krueger, E. G., 53
Kubie, L. S., 360-1

Laborde, Léon, 208
Lacroix, Paul, 28
Laehr, H., 102
Lafenestre, Georges, 202
LaFranca, S., 296, 298
Lagrange, E., 363, 364
Lain Entralgo, P., 355
Lamarck, *Chevalier de*, 424

Lancaster, *Sir* James, 12
Lancaster, *Capt.* John, 8
Land, C. H., 111
Landolt, Marc, 16, 183-4, 193, 214
Landsberg, C., 184, 190
Lane, *Sir* W. A., 438
Lankester, E. R., 428, 429
Larabee, Ephraim, 151
Larrey, *Baron* D. J., 347
Lavoisier, A. L., 127, 369-71, 447
Laycock, *Professor*, 248
Leake, C. D., 356, 447
Lebensohn, Z. M., 456
Leboeuf, Jacques, 96
Lechler, Martin, 345
Lee, *Sir* Sydney, 160
LeFanu, W. R., 344-6, 372
Leibniz, G. W., 13, 218
Leikind, M. C., 110
Lelli, Ercole, 442, 444
Lenoir, Alexandre, 221
Leonelli, 441
Leopold, J. D., 344, 345
Leriche, René, 448
Le Roy, J. B., 230
Leuret, 284
Levanti, Antonio, 444
Levasti, Arrigo, 27
Lewis, Cornewall, 311
Lewis, N. D. C., 456
Lewis, *Sir* Thomas, 445, 446
Leyde, 230
Libri, Guglielmo, 25, 27-9, 195
Lichtenberg, G. C., 70, 71, 72, 90
Lichtenberg, L. C., 70, 90
Linacre, Thomas, 174, 355, 357, 399
Lincoln, Abraham, 350
Lindroth, Sten, 366
Lindskog, G. E., 454-5
Linné, Carl, 1, 360, 424
Lind, James, 1-12
Lindbergh, C. A., 111
Lippard, V. W., 110
Lippmann, E. O. von, 29, 30
Lipps, 248
Lipsius, Justus, 201
Lister, *Lord*, 239-40, 447, 455
Litchfield, Henrietta, 438
Literary and Botanico-Medical Institute (Columbus, Ohio), 140
Litta, 18
Livett, 329
Livorno, Prato, 40
Lloyd, J. U., 143
Lloyd, O. M., 233, 412-21, 458
Lluellen, Martin, 409, 410
Lobb, 306
Lodi, Teresa, 28
Loeb, Jacques, 47-53
Loewi, O., 294, 298
Lombroso, Cesare, 425, 426, 428
Lord, 329
Lovelace, Richard, 376
Lowe, Peter, 353
Lundsgaard, K. K. K., 15
Lupton, B., 304
Lusk, Graham, 290, 293, 294
Luther, Martin, 345
Lychnos, 366
Lydenberg, H. M., 227
Lyly, 410

Macalpine, Ida, 102-3, 117-18, 247-60, 372
MacCallan, A. F., 195, 214
McClintock, 293
McDonald, D. A., 446
McDowell, Ephraim, 454
Macken, D. L., 372
McKie, Douglas, 103, 132
MacKinney, L. C., 358
McLean, H., 289, 298
Macleod, J. J. R., 297
McMenemey, W. H., 242
McNee, J. W., 65
McNeil, M. G., 40
Maggi, 441
Maggini, Francesco, 31
Magini, 449
Magliabechi, Antonio, 41, 186
Magoun, H. W., 447
Major, R. H., 110
Malgaigne, J.-F., 203
Malloch, Archibald, 342, 354
Malpighi, Marcello, 441
Manfredi, 441
Mann, Gunter, 448
Manni, D. M., 19-21, 24, 29-35, 38, 41-2, 44-5, 184, 186, 188-96, 200-1, 204-5, 209-11
Manzini, C. A., 13
Maplet, 409
Marbecke, 343
Marchesan, Angelo, 205
Marchese, Vincenzo, 24, 37
Marchionne, 204
Marie, Pierre, 347
Mariot, John, 160
Mark *of Toledo*, 169
Marshall, Mary L., 367-9
Marten, Benjamin, 105
Márti-Ibáñez, Felix, 353
Martin, Rachel, 165
Martin, T.-H., 32, 36
Martinez, Giulio, 37, 183, 205-6
Martinotti, Giuseppe, 187
Marxer, A., 298
Mary, *Queen*, 174
Masetti, P. T., 14, 32-3, 42
Mason, S. F., 124
Massa, Nicolaus, 261, 345, 346
Masson, Albert, 19, 29, 185, 201, 217
Mather, Cotton, 113
Mather, Increase, 340
Matousek, Bozena, 109-10
Matrod, Henri, 206
Matteini, Nevio, 227
Mattley, 284
Mattson, Morris, 151
Maurice, *Count*, 24
Maxwell, J. C., 71, 81
Maxwell, William, 285, 286
Mayerne, *Sir* Theodore de, 412, 415, 416

Mayo, C. H., 121
Mayo, W. J., 121
Mayo, W. W., 121
Mazzatinti, Giuseppe, 14, 20
Mazzuchelli, Giammaria, 186
Mead, Richard, 176, 178, 179, 180, 181, 275-87
Medea, E., 49, 53
Medici *family*, 221
Meehan, C. P., 37
Mehring, 288
Meissen, Heinrich von, 207
Meissner, 207-8
Melnick, Joseph, 116-17
Meltzer, S. J., 293, 298
Ménage, Gilles, 36
Menger, Rudolph, 104-5
Menici, Giuseppe, 192, 218
Mercuriale, Gerolamo, 201
Mercuriali, 441
Mercury, 227
Merrell, W. S., 143
Merrett, Christopher, 233, 413, 421
Merton, E. S., 448
Mesmer, F. A., 275-87
Messier, Leonard, 95
Mesue, 172, 174, 177, 181, 227
Metchnikoff, I. I., 364
Metropolitan Medical College (New York), 141
Meyer, Adolf, 427, 429
Meynert, 254
Migliarini, A. M., 27
Migliore, G. B. del, 186
Mihailovic, L. T., 240-2
Mill, J. S., 30
Millar, Richard, 58
Miller, Genevieve, 227, 446, 447
Miller, H. W., 449
Milt, Bernhard, 287
Milton, John, 399, 400
Minkowski, 288, 290, 296
Mioni, Ugo, 31, 39, 40
Mitchill, S. L., 238
Modena, Tommaso da, 205
Moir, D. M., 181, 182
Molyneux, William, 43, 209
Mommsen, Theodore, 100
Mondino *dei Luzzi*, 262, 273, 441
Monro, T. K., 375
Montaigne, 405
Montaña, 237-8
Montecalvo, 441
Monticolo, Giovanni, 211
Montpersan, Louis de, 103-4
Moreau, J. J., 424
Morel, B. A., 423, 424, 426, 428, 429
Moreni, Domenico, 18, 31-33, 44-5, 215
Morgan, John, 231
Morgan, Silvanus, 103
Morison, Alexander, 102
Morris, A. D., 107
Morton, W. T. G., 109, 454
Motyel, Marandon de, 425, 429
Moundeford, Thomas, 418
Mozart, W. A., 106
Moniz, Egas, 362
Moore, *Dr.*, 324, 329
Moreau, 284
Moses *of Palermo*, 172
Moses *of Salerno*, 171
Mott, *Sir* F. W., 233
Müller, Curt, 26, 206, 214
Müller, Johannes, 241
Mundy, J. H., 358
Munk, William, 57, 60, 63, 65, 161, 232, 343
Muratori, L. A., 20, 29, 204
Murlin, J. R., 288-98, 372
Musgrave, 283
Musitelli, 233

Nannucci, Vincenzio, 42
Nardin, D. K., 148
Narducci, Enrico, 25, 27, 29-34, 38, 43, 44, 45
Navagero, Andrea, 234
Neander, M., 345, 346
Negri, Salomon, 178, 180, 181
Nelli, G. B. C. de', 45, 186, 194, 196, 210, 217, 218
Nelson, B. J., 358
Neuburger, Max, 102, 366
Nevins, Allan, 350
Newton, Calvin, 141
Newton, *Sir* Isaac, 81, 82, 259, 278, 280, 281
Nicaise, Edouard, 203
Niccoli, Raffaello, 443
Nicholas *of Cusa*, 206
Nichols, C. H., 456
Nicolson, Marjorie, 404
Nietzsche, F. W., 426
Nightingale, Florence, 117, 239
Nixon, P. I., 104-5, 125
Nollet, *Abbé*, 230
Nordau, Max, 426, 428, 429
Nordström, Johan, 366
North, Elisha, 109
Novi dei Cavallosari, Ugolino di ser, 20, 41

Oates, J. C. T., 235-6
Oliaro, Tomaso, 229
Oliver, G. H., 25, 27, 184, 193
Olsson, Bror, 366
O'Malley, C. D., 235, 261, 445
Oppenheim, Hermann, 48-50, 52, 53
Oribasius, 174
Orlandi, Stefano, 14, 20, 32, 40-2, 46, 189, 209
Orlandini, Lodovico, 26
Osborn, H. F., 424, 429
Osiris, 364
Osler, *Sir* William, 156, 233, 341, 348-9, 359, 360, 367, 448
Osterhout, W. J., 53
Oudin, Casimir, 41
Overholser, Winfred, 236-7, 455-6
Ovio, Giuseppe, 25, 184-6, 192, 195, 199, 200, 205, 213

Paatz, Elisabeth, 192, 197
Paatz, Walter, 192, 197
Paget, George, 233

Pagliai, *Dr.* Francesco, 15
Pagni, Giovanni, 210
Pagnini, Pietro, 183, 196, 209
Palatino, 36
Palermo, Francesco, 184
Palmer, G., 66-96
Panciatichi, Lorenzo, 18, 26
Pandolfini, Filippo, 27-9, 34-6
Pandolfini, *Senator* Ruberto, 27
Paneth, F. A., 229
Pansa, Giovanni, 30, 34, 38, 40, 203
Pansier, Pierre, 25, 36, 190, 198, 202-3
Paoli, Cesare, 28
Papini, Carlo, 195, 199
Paracelsus, 285, 353, 395, 397, 403, 404, 408, 410
Paré, Ambroise, 203, 354, 360, 454
Parigi, Tommaso, 190
Paris, 303
Parisanus, Aemylius, 409
Parkinson, James, 107, 242-3
Parks, G. B., 357
Pasha, Ali, 57
Passerini, Luigi, 18, 187, 191
Pasteur, Louis, 105, 240, 353, 363
Patrick, Adam, 116-17
Patterson, S. W., 290, 298
Pattie, F. A., 275-87, 372
Paulet, J.-J., 285, 286
Paulze, Jacques, 370, 447
Pavlov, I. P., 362
Payne, L. M., 160, 232, 342-3, 372
Pazzini, Adalberto, 106
Peccioli, Domenico da, 20, 40, 41, 200
Peckham, John, 30, 206
Pecquet, Jean, 383, 384, 394, 408
Peel, *Sir* Robert, 301
Pell, S., 160
Pellegrini, Francesco, 108, 233-4, 444
Pelseneer, Jean, 197
Pende, Nicolas, 428, 429
Percival, Thomas, 432
Perkins, Henrietta T., 367-9
Persiano, Regidio, 217
Petella, Giovanni, 13, 18, 25, 40, 183, 192, 195, 200, 214, 216
Peter *of Abano*, 175
Peters, Hermann, 218
Petrarch, 192, 195, 204, 208
Petruccius, Thomas, 224-5
Pfaff, Fridrich, 207
Phillips, W. A., 298
Phryesen, Lorenz, 262, 273
Physio-Medical Institute (Cincinnati, Ohio), 141
Piazza, Ugo, 228
Piccini, Giulio, 201
Picotti, G. B., 37
Pierce, Franklin, 456
Pierrepont, Henry, *Marquis of Dorchester*, 377
Pinel, Philippe, 239, 362
Pink, Karl, 99
Pipozzo, Sandro di, 16
Piso, 283
Pitcairn, 283
Plato, 398, 399, 400
Plemp, V. F., 175, 176, 201
Pliny, 169, 174, 217, 279, 397, 406
Pliny *The Elder*, 230
Plotinus, 398
Poisonniere, *Dr.*, 11
Pollard, W. H., 156
Poppelreuter, W., 47, 53
Porro, Giulio, 445
Portonariis, Vincent de, 352
Postell, W. D., 367
Potts, W. J., 455
Power, 304
Power, *Sir* D'Arcy, 342
Poynter, F. N. L., 107, 235, 351, 356, 374-83, 458
Pratt, J. H., 288, 289, 297, 298
Prettyman, J. S., 154
Price, P. A., 53
Priestley, Joseph, 66, 67, 72, 83, 84, 90
Primrose, Jacob, 406
Prujean, 377
Pucci, Giuseppe, 27-8
Puccinotti, Francesco, 40
Pussin, J.-B., 239

Quen, J. M., 118
Quétif, Jacques, 205
Quinquet, M., 86, 87, 88

Rabin, C., 274
Radbill, S. X., 229
Radcliffe, John, 176
Rainy, Harry, 59, 61
Rajna, Pio, 34
Raleigh, *Sir* Walter, 348, 349
Ramaugé, Anatole, 214
Ramazzini, Bernardino, 279, 283
Rambelli, Gianfrancesco, 32, 38, 184
Ramón y Cajal, S., 362
Ranking, G. S. A., 178
Ranuzzi, 441
Rath, Gernot, 448
Razzi, Serafino, 41
Redi, Francesco, 15-27, 29, 33, 35-43, 46, 183, 191-2, 194-5, 198-201, 209-10
Reed, C. I., 231
Reider, N., 53
Reigh, 329
Reimann, S. P., 237
Reis, Wiktor, 16, 29, 41, 43, 200, 208
Rena, Cosimo della, 185-6, 195
Renzi, S. de, 167, 168, 169
Rhazes, 169, 171, 172, 174, 177, 178, 179, 180, 181, 182
Riccardiano, 32, 36
Richa, Giuseppe, 192
Richard, 190, 204
Richard *of Bury*, 169
Richards, R. L., 54-65, 125
Richer, Paul, 221
Riddoch, George, 233
Rimmelin, Th., 150
Rivalto, *Friar* Giordano da, 25-36, 38, 40-6, 183, 186, 188, 192-3, 198, 200-1, 207-8, 211, 213, 215-17

Rivers, W. C., 348, 349
Robert, *Duke of Normandy*, 167, 168
Robert *Retinensis*, 175
Robertson, *Dr.*, 10
Robinson, E., 170
Rocchi, Vincenzo, 19, 25, 36, 183
Rocco, Giampaolo, 449
Rogers, F. B., 446
Rogers, Joseph, 327, 329, 334, 335, 337, 338
Rogers, Thorold, 334
Rognetta, Francesco, 25
Rohr, Moritz von, 16, 17, 185, 200, 204, 207-8
Rolleston, *Sir* H. D., 12
Romansky, M. J., 298
Ronchi, Vasco, 13, 30, 204, 207, 217
Rose, William, 414, 421
Rosen, Edward, 13-46, 125, 183-218, 244
Rosen, George, 111, 119-20, 362, 446
Rosenthal, Robert, 120-1
Ross, Alexander, 410
Ross, Samuel, 151
Rosselli, Stefano, 189-92
Rostagno, Enrico, 28
Rostenberg, Leona, 104
Rota, 441
Roux, Emile, 363-4
Rouyer, Joseph, 16, 29, 41-2, 195
Royal College of Physicians of London, 412-21, 445-6
Royce, Samuel, 426, 427, 429
Rozier, *Abbé* François, 95
Rumsey, H. W., 304, 307, 308, 315, 329, 338
Rush, Benjamin, 355
Russell, *Lord* John, 62, 300, 301, 303
Russell, *Rev.* J., 306
Russell, P. F., 116
Ryff, Walther, 263, 264, 269, 273

Sachetti, Franco, 204, 208
Sadler, W. S., 429
St. Augustine, 398
St. Catherine, 14
St. Gertrude, 206, 207
St. Stephan, 347
St. Thomas, 398
Salisbury, *Marquess of*, 343
Sallander, Hans, 359-60
San Concordio, *Friar* Bartolomeo da, 20, 33, 41-3, 194, 196, 200, 201, 210
Sanctorius, 282
Sanfermo, Eugenio, 213
San Gimignano, Giovanni da, 201, 208
San Luigi, Ildefonso di, 189
San Nazzaro, G. R. di, 352
Sarró, Ramón, 456
Sarton, George, 16, 29, 105-6, 112-13, 202, 204, 215, 446; Sarton Medal, 446
Savonarola, 31
Sayre, L. A., 438
Sbaraglia, 441
Scaliger, 377
Scalinci, Noè, 23, 192
Scarborough, 377
Scheiner, 449
Schellinck, T.-A.-L., 198, 199
Schreber, D. P., 117-18
Schürer-Waldheim, F., 275, 276
Schuler, Fridolin, 120
Schullian, Dorothy M., 101-11, 219-31, 233-5, 339-58, 440-50
Schuman, Ida and Henry, Historical Essay Prize, 446
Schuman, Henry, 356
Schwartz, Johann, 203
Scientific and Eclectic Medical Institute (Virginia), 140
Scott, E. L., 289, 297, 298
Scott, *Sir* H. H., 5, 12
Scott, Kenneth, 365
Scotus, Michael, 169, 170, 175
Scribonius Largus, 229
Seebeck, A., 72, 73, 90, 92
Segantini, 454
Segarizzi, Arnaldo, 445
Segneri, Paolo, 36
Seide, J., 365-6
Semans, *Mrs.* J. H., 356
Semmelweis, I. P., 347
Seneca, 201, 211
Serapion, 177
Sermartelli, *Friar* Giovanni, 189, 190
Sermartelli, Niccolò, 189
Severance, R. W., 447
Shaftesbury, *Lord*, 303
Shakespeare, William, 349
Sharp, Samuel, 101-2
Shastid, T. H., 183
Shattuck, Lemuel, 109
Shaw, John, 430
Sherrington, *Sir* Charles, 362
Shuttleworth, Kay, 304
Sidney, *Sir* Philip, 377
Sigerist, H. E., 238
Singer, Charles, 29, 183-4, 202, 261-74, 372, 446, 451-2
Singer, Dorothea, 446
Sites, John, 154
Sivadon, P. D., 456
Sloane, *Sir* Hans, 415
Smedley, Ida, 290, 298
Smith, E. T., 25, 183, 193, 198, 214
Smith, Edward, 318, 321, 325, 330, 332, 338
Smith, Elisha, 149
Smith, John, 448
Smith, Robert, 16, 36, 43, 209
Smith, *Sir* William, 182
Smollett, Tobias, 3, 12, 102
Snyder, H. M., 446
Society of Apothecaries, 412-15, 416, 421
Sooper, H. R., 312
Soranus, 364-5
Sorbelli, Albano, 14, 20
Soretic, Mihailo, 241
Sorsby, Arnold, 15, 25, 183, 185
Southern Botanico-Medical College (Georgia), 140
Sparmann, 221
Spector, Benjamin, 339-41, 355, 357, 372
Spenser, 397, 399
Spera, Lucio, 46, 192
Sperry, B. W., 151

Spina, *Friar* Alessandro, 14, 15, 18-26, 30, 36-40, 42-6, 184, 190, 192-4, 198-200, 209-11, 215-16, 218
Spina, Bartolomeo, 194
Spina, Filippo, 193
Spina, Gerardo, 193
Spina, Jacopo, 193
Spina, Leonardo, 193
Spina, Neri, 194
Spina, Paolo, 194
Spina, Ranieri, 194
Spina, *Friar* Stefano Bonaiuti, 194
Spina, Stefano de Pungelupis, 194
Spini, Geri degli, 194
Spon, Jacob, 36
Staehlin, R., 294, 298
Stanojević, Vladimir, 365-6
Starling, E. H., 288, 289, 290, 298
Steele, Robert, 206
Steinhausen, T. B., 298
Stephen *of Antioch*, 169
Steudel, Johannes, 108
Stevenson, L. G., 101-2, 125, 230, 346-8, 372, 444, 447
Stevenson, W. B., 181
Stillwell, Margaret B., 359
Stimson, Dorothy, 105, 112-13
Stoddard, Lothrop, 427, 429
Stott, Mary, 165
Straus, W. L., 451
Streatfield, 303
Street, Gerard, 54
Streeter, E. C., 97
Stübler, Eberhard, 344
Subba Reddy, D. V., 231
Susruta, 239
Sussex, *Duke of*, 55, 64
Sudhoff, Karl, 359
Suidas, 364
Swammerdam, Jan, 366
Sydenham, Thomas, 61, 175, 282, 283, 351, 352
Sylvaticus, Matthew, 175
Sylvester, 397
Sylvius, Jacobus, 262, 264, 273, 424

Tagliacozzi, Gaspare, 441, 442
Talbet, E. S., 424, 429
Tamburini, Gino, 14, 20, 40
Targioni Tozzetti, Giovanni, 13, 15, 18, 19, 26, 40, 46, 184, 186, 193, 201, 203
Taylor, 317
Temkin, Owsei, 284, 355, 364, 365, 447
Tempesti, Ranieri, 20, 23-4, 33-5, 46, 185, 192
Ten Doesschate, G., 206
Teodosi, 441
Terlon, *Chevalier de*, 220
Teuber, H. L., 48, 53
Thacher, Thomas, 158
Thiébaut, F., 47, 53
Thomas, H. R., 346
Thompson, C. J. S., 25, 29, 193, 198, 214
Thoms, Herbert, 364-5
Thomson, Allan, 62
Thomson, Elizabeth H., 111
Thomson, Samuel, 133-55
Thomson, William, 62
Thorn, James, 151
Thorndike, Lynn, 202-3
Thouret, 285, 286
Thurneysser, Leonhard, 404
Tinti, Lorenzo, 444
Tiraboschi, Girolamo, 31-3, 38, 41
Tischner, Rudolph, 275, 276
Todd, A. C., 430-8, 458
Tolstoy, Leo, *Count*, 426
Toniolo, *Father* Pierluigi, 14
Toogood, *Dr.*, 301
Torricelli, Evangelista, 21
Trajan, 174, 365
Traux, F. L., 298
Trent, J. C., 356
Trestelle, *see* Martinez, Giulio
Trevor-Roper, P. D., 196
Trivulzio, G. G., 444-5
Tronci, Paolo, 43
Trotter, Thomas, 12
Trotula, 203
Troxel, Wilma, 368
Tucca, 233
Tulp, Nicolaas, 282
Turberville, Dawbigney, 90
Turnbull, Alexander, 12
Turrini, Giuseppe, 233
Tyrrell, M. L., 157

Udall, 402
Ugolino, 200
U. S. National Library of Medicine, 446
Upton, R. B., 300
Urdang, George, 133, 158
Utstein, Gertrude, 16, 190

Vallance, 303
Valpy, A. J., 62, 65
Vanäs, E., 366
Van de Casteele, E., 198
Van der Haeghen, Victor, 198
Van Helmont, *see* Helmont, J. B. van
Varignana, 441
Varius, 233
Varolio, 441
Vaughan, Henry, 376
Veith, Ilza, 114-15, 452-3, 457
Venn, J., 374
Venturi, G. B., 206
Vergerie, 241
Vergil, 233
Verrier, René, 168, 169
Vesalius, Andreas, 174, 261-74, 353, 424, 454
Vesling, Johann, 225
Viets, H. R., 108, 117, 341
Vigerano, Guy de, 262, 273
Vincent, *of Beauvais*, 357, 358
Vitelli, Camillo, 14, 20, 40
Voigt, J. H., 90, 92, 93, 94, 95, 96
Volpi, Guglielmo, 16
Vroede, P. L. de, 198, 199

Wade, 304
Wagner, Richard, 426

Waite, F. C., 141, 142, 356
Wakeman, 315
Wakley, Thomas, 324, 337, 352-3
Wallace, A. R., 424
Waller, E. A., 359-60
Wallis, 329
Walls, G. L., 66-96, 125
Walsham, *Sir* J., 304, 312
Walshe, F. M. R., 242
Walter, R. D., 422-9, 458
Walton, John, 109
Warren, Edward, 109
Warren, Joseph, 109
Wartmann, Élie, 73-5, 78, 84, 86, 88, 93-5
Waterhouse, Benjamin, 109
Watson, E. C., 14, 16
Watson, Richard, 396, 410, 411
Watt, James, 432
Wayne, E. J., 54
Webb, Beatrice, 303, 338
Webb, Sidney, 303, 338
Webster, George, 313
Webster, J. P., 442
Webster, J. W., 109
Wecker, J. J., 217
Wedgwood, Josiah (son of Josiah the younger), 431, 436
Wedgwood, Josiah (the younger—1769-1843), 430-8
Wedgwood, Sarah Elizabeth, 431-8
Wedgwood, Thomas, 432
Weil, E., 220-1, 244
Weinman, David, 363-4
Weiss, H. B., 226
Wellcome Foundation Film Unit, 445
Wellcome Historical Medical Library, 446
Wells, Horace, 454
Welsch, 176
West, A. F., 226
Weve, H. J. M., 38
White, James, 109
White, P. D., 109
White, William, 348-9, 372
Whitman, Walt, 348-9
Whitson, *Dr.*, 58
Wickersheimer, C. A. E., 226, 273
Wilder, Alexander, 135, 136, 138, 140
Wilder, Lucy, 120-1
William *The Conqueror*, 167
William Rufus, 167, 168
Williams, H. B., 294
Williams, W. J., 154
Williamson, Raymond, 105
Willis, Robert, 343, 344, 454
Wilson, Albert, 425, 429
Winchell, Horace, 97
Witelo, 30
Withington, E. T., 173
Wolfart, K. C., 275, 277
Wonnecker, 241
Wood, C. A., 183
Woodall, John, 8, 12
Worcester Medical School, 141
Wotton, Edward, 357
Wünsch, C. E., 82
Wulf, Maurice de, 198
Wyatt, R. B. H., 342
Wyss, O. A. M., 111

Yelloly, 307
Yorke, Charles, 179
Young, 303
Young, Agatha, 454-5
Young, L. E., 298
Young, Thomas, 73, 81, 82, 87, 88, 89, 90, 92, 94

Zanetti, Filippo, 227
Zanetti, Vincenzo, 213
Zante, D. L. del, 42
Ziegler, K. A., 344
Zilboorg, Gregory, 110, 456
Zola, Émile, 426
Zucchelli, Niccola, 37, 38, 40
Zuelzer, G., 288, 297, 298

DOES NOT CIRCULATE

Journal of the History of Medicine and Allied Sciences

NOV 19
MEDICAL

CONTENTS

A Poem in Praise of Harvey, *F. N. L. Poynter* . . 374

John Collop's Medical Poems, *Conrad Hilberry* . . 384

The Royal College of Physicians and Some City Livery Companies, *O. M. Lloyd* 412

What Became of the Degenerate?, *Richard D. Walter* . 422

Thomas Beddoes and Spinal Curvatures, *A. C. Todd* . 430

A Salute to Abraham Flexner, *John F. Fulton* . . 439

Notes and Queries 449

Book Reviews 451

VOLUME XI OCTOBER 1956 NUMBER 4

PUBLISHED QUARTERLY FROM THE
DEPARTMENT OF THE HISTORY OF MEDICINE
YALE UNIVERSITY, NEW HAVEN, CONNECTICUT

FOREIGN DISTRIBUTOR: LLOYD-LUKE (MEDICAL BOOKS) LTD., 49 NEWMAN STREET, LONDON W. 1

JOURNAL OF THE HISTORY OF MEDICINE
AND ALLIED SCIENCES

BOARD OF EDITORS

JOHN F. FULTON, *Editor*
MADELINE E. STANTON, *Assistant Editor*
ELIZABETH H. THOMSON, *Assistant Editor*

MAX H. FISCH
THOMAS R. FORBES
GENEVIEVE MILLER
GEORGE ROSEN
HENRY E. SIGERIST
LLOYD G. STEVENSON

WARNER L. WELLS

STUDENT EDITORS

ANTHONY L. FONS, III
JACK PETER GREEN
C. RICHARD HINCKLEY
KRISTAPS J. KEGGI
DANIEL L. MACKEN
HUGH L. MOFFET
JOSEPH S. PAGANO
ARNOLD SCHULMAN

LISA A. STEINER

CONSULTING EDITORS

HOWARD ADELMANN, *Ithaca*
WYNDHAM B. BLANTON, *Richmond*
GEORGE W. CORNER, *New York*
T. G. H. DRAKE, *Toronto*
WILLIAM W. FRANCIS, *Montreal*
CLAUDE E. HEATON, *New York*
EDWARD H. HUME, *New York*
OLOF LARSELL, *Minneapolis*
CHAUNCEY D. LEAKE, *Columbus*
W. B. McDANIEL, 2d, *Philadelphia*
RALPH H. MAJOR, *Kansas City*
MARY LOUISE MARSHALL, *New Orleans*
CURT PROSKAUER, *New York*
J. B. deC. M. SAUNDERS, *San Francisco*
RICHARD H. SHRYOCK, *Baltimore*
GEORGE URDANG, *Madison*
HENRY R. VIETS, *Boston*
GREGORY ZILBOORG, *New York*
J. JOHNSON ABRAHAM, *England*
WALTER ARTELT, *Germany*
JUAN RAMON BELTRÁN, *Argentina*
F. J. COLE, *England*
A. CORSINI, *Italy*
O. COSTA MANDRY, *Puerto Rico*
SANTOS A. DOMINICI, *Venezuela*
FLAMINIO FÁVERO, *Brazil*
H. FISCHER, *Switzerland*
EDV. GOTFREDSEN, *Denmark*
JENS L. HANSEN, *Denmark*
J. JOAQUIN IZQUIERDO, *Mexico*
PEDRO LAIN ENTRALGO, *Spain*
STEN LINDROTH, *Sweden*
JOSÉ LÓPEZ SÁNCHEZ, *Cuba*
CARLOS MARTINEZ DURÁN, *Guatemala*
RAYMOND NEVEU, *France*
VIRGILIO PAREDES BORJA, *Ecuador*
CARLOS ENRIQUE PAZ SOLDÁN, *Peru*
D. V. SUBBA REDDY, *India*
RAYMOND DE SAUSSURE, *Switzerland*
RAFAEL SCHIAFFINO, *Uruguay*
AUGUSTO DA SILVA CARVALHO, *Portugal*
CHARLES SINGER, *England*
A. SUHEYL UNVER, *Turkey*

Subscriptions. The Journal is published quarterly in January, April, July, and October from the Department of the History of Medicine, Yale University. Publication Office is at New Haven, Conn. Subscriptions should be sent to the Department of the History of Medicine, 333 Cedar Street, New Haven 11, Conn., or to Lloyd-Luke (Medical Books) Ltd., 49 Newman Street, London W. 1, England, at the following rates: $7.50 a year; single copies $2.50 postpaid.

Entered as second class matter at the Post Office at New Haven, Conn., 14 February 1952 under the Act of March 3, 1879.

ISIS

The Foremost International Journal Devoted to the History of Science and Its Applications

Organ of the History of Science Society

(Constituent of the American Council of Learned Societies)

EDITORIAL COMMITTEE: Marshall Clagett, University of Wisconsin; I. Bernard Cohen (Editor and Chairman), Harvard University; I. E. Drabkin, City College, New York; John F. Fulton, Yale University School of Medicine; Henry Guerlac, Cornell University; Conway Zirkle, University of Pennsylvania.

The History of Science Society has members in all parts of the world, and in every field of creative activity and scholarship. By its constitution it is intended to encourage and maintain an active interest in the history of science in general, as well as in the particular sciences. In actual practice, its function is much wider, for the Society serves to bridge the gulf between the humanities and the sciences, by suggesting the humanistic values and meanings of scientific progress and by describing the cultural matrix in which science has grown to its present stature.

ISIS was founded in 1912 by George Sarton. Regular quarterly numbers contain excellent scholarly articles, extensive book reviews, news of current developments in the field of its interests, and regular installments of its famous Critical Bibliography.

Membership in the Society is open to anyone interested in the history of science. The annual dues ($7.50) include a subscription to ISIS. Student membership is $5.00. Sustaining membership is $50.00 or more. Single issues of ISIS are $2.00 each. Subscriptions may be addressed to the Treasurer, The History of Science Society, Burndy Library, Norwalk, Connecticut. Editorial and other communications and requests for back issues of ISIS should be addressed to the Editor, I. Bernard Cohen, Widener Library 189, Cambridge 38, Massachusetts, U.S.A.

On the Genesis of the Ovum of Mammals and of Man

A Letter to the Imperial Academy of Sciences of St. Petersburg

by KARL ERNST VON BAER

translated into English by

CHARLES DONALD O'MALLEY

with an introduction by

I. BERNARD COHEN

Illustrated with a reproduction of the copper-plate engraving from the original edition published in Leipzig in 1827.

Reprints from ISIS, Volume 47, Part 2, No. 148, 1956, may be ordered from the Editor, Dept. H, Widener Library 189, Cambridge 38, Massachusetts $1.00

JOURNAL OF THE HISTORY OF MEDICINE AND ALLIED SCIENCES

Scope. The JOURNAL OF THE HISTORY OF MEDICINE AND ALLIED SCIENCES aims to publish work relating to all aspects of the history of medicine, public health, dentistry, nursing, pharmacy, veterinary medicine, and the various sciences that impinge on medicine.

Manuscripts. Manuscripts for publication should be typewritten in double space and should be addressed to John F. Fulton, M.D., 333 Cedar Street, New Haven 11, Connecticut.

References. Literature cited should be arranged alphabetically by author and typewritten in *double space.* Each reference should contain name(s) and initial(s) of author(s) and full title of paper or work. Journal articles should also include name of journal, year, volume number, and complete pagination in that order. Abbreviations of journal citations should conform to the style used in *World List of Scientific Periodicals Published in the Years 1900-1950* (3d ed., Butterworths Scientific Publications, 1952). With books, the city of origin, publisher, date, and full pagination should be given. Examples of each type of reference follow:

Holmes, William. The repair of nerves by suture. *J. Hist. Med.*, 1951, *6*, 41-63.

Franklin, K. J. *A short history of physiology.* London, Staples Press, 1949. 147 pp.

Footnotes. Footnotes should be typewritten in double space either at the bottom of the pages or indented in the text. They should be cited in the text by superior numerals with sequential Arabic enumeration (1, 2, 3, 4, etc.). The form of citation should follow that given under references.

Illustrations. All illustrations, especially photographs, should be sharp and clear and submitted ready for publication, i.e., with lettering, arrangement, and mounting of figures completed. Photostats, except for simple line drawings, are rarely acceptable. Four illustrations are allowed free of charge. Illustrative material in excess of this is accepted at the author's expense.

Books for Review. These should be sent to the Editorial Office marked for Dr. Fulton's attention.

Reprints. Reprints may be ordered by authors or institutions at the rates given on the forms attached to galley proofs. Reprint orders must be sent with the corrected galley proofs.

RARE BOOKS
IN THE SCIENCES
Send for Our
Latest Catalogues

Books & Libraries
Purchased
ZEITLIN & VER BRUGGE
BOOKSELLERS
(Cable address: *Jabberwock*)
815 N. La Cienega Blvd.
Los Angeles 46, Calif.

5485